Lectures ON INDIVIDUAL HYGIENE.

Delivered at St. Bartholomew's Hospital,

BY REGINALD SOUTHEY, M.D., F.R.C.P.,
PHYSICIAN TO, AND LECTURER ON FORENSIC MEDICINE AND HYGIENE AT, THE HOSPITAL.

LECTURE IV.

I TAKE SEX for my subject for to-day.

The anatomical features distinguishing the two sexes do not require notice by me. I have to deal with the generative functions, their establishment, their due fulfilment, and the degree in which they influence individual health. The establishment of puberty takes place somewhat earlier in girls than in boys, but in both sexes its advent is greatly influenced by climate and surrounding conditions, by race and by habits of life, being earlier in hot climates and among Eastern races, in those brought up in hot rooms and highly fed; acquired early, it terminates early, and, conversely, if late, late.

The full perfection of sexual abilities is gradually attained in both sexes, more gradually in the male than in the female.

The sexual epoch may be described in the male by an arc-line commencing at or about the age of sixteen, gradually mounting up to a summit of highest vigour at thirty-five, maintained at its acme of energy between thirty-five and forty-six, and steadily decreasing by more sudden descent than its curve of ascent between forty-six and sixty-three. The capacity to procreate is retained in males after sixty-three, but the children born to fathers after that age are seldom the finest specimens of humanity, mentally or bodily.

Menstruation in girls begins as a rule, in England, between the ages of fourteen and sixteen, although it is very often established at eleven in individuals born of young and vigorous parents, inheriting well-developed frames and possessed of nervous or sanguine temperaments. The lymphatic temperament is latest in maturing. Tacitus ascribes the inexhausted virility of the ancient Germans to the late age at which sexual indulgence and marriage was postponed among them. Thus, "Sera juvenum venus eoque inexhausta pubertas; nec virgines festinantur; eadem juventa; similis proceritas. Pares validæque miscentur ac robora parentum liberi referunt."

Women rarely reach their maximum aptitude for bearing vigorous offspring until the age of twenty-two—indeed, from twenty-five to twenty-eight is the best age for women to become mothers for the first time. The average duration of the reproductive faculties in women is thirty years; of the procreative faculty in men fifty years.

Puberty modifies the individual constitution very importantly, and the two sexes somewhat differently; thus, the female derives a mental impetus, her intelligence expanding with increasing development of her form and the perfectioning of her generative apparatus. The male more often exhibits an intellectual drawback; in him the stimulus to action is felt very profoundly; the muscular instincts, however, divide supremacy with the generative, and the chaste youth is constrained by his natural impulses, for a while at least, to spend his energies in field sports and win his way to fame by his arms and legs. The vicious practices prompted by perverted sexual instincts, and which are alleged to undermine the health of the body and to delay the expansion of the intellect, emanate, I believe, much more from over-exercise of the brain and its general unhealthy employment than from any excess of genital impulse.

Vicious habits are doubtless easily acquired at or about the advent of puberty, and they tend no doubt to delay the development, and ultimately the healthy performance, of the sexual functions; but they are habits that spring up from mal-hygienic conditions of life, and are promoted by evil companionship and insufficient out-door occupations. That grievous harm may arise from them in persons of nervous temperament, and who come of insane stocks, I will not dispute; but the full category of evils which have been traced by some authors to this source are, I am sure, for the most part imaginary. The evil is a real one, but not so great as it has been made out to be; and the remedy for it may be shortly detailed. First and foremost comes sound physiological teaching: the indoctrination of young males with the fact that perfect chastity of mind and body is not only feasible, but pre-eminently profitable towards the attainment of present and future happiness. Secondly: Active open-air sports with muscular companions, bodily and mental. There is an old French proverb worth remembering here: "Qui fait aimer les champs fait aimer la vertu." Thirdly: Early going to bed, and early rising. Fourthly: A firm horsehair mattress and horsehair pillow to sleep on, keeping the spine cool. Fifthly: Cold or shower bathing. Sixthly: The society of pure and high-minded women. Seventhly: The cultivation of rational and elevating amusements—music, drawing, &c.

Those who have carefully watched the development of the male at the period of puberty have often noticed that a distinct enlargement and induration of the mammæ take place in him, as also that some periodical changes take place in him remotely analogous to the catamenial impulse of the female. Sanctorius, and Gall after him, state that male adults in health, taking no more than their ordinary food, increase in weight each month from one to two pounds, with regularity, up to a certain date; when their mental state undergoes a peculiar and noticeable alteration, the individual becoming suddenly morose, captious, and irascible, dull about his duties, slow in his intellection, and complaining both of himself and of those about him; digestion is slightly disordered, the bowels are costive, the urine is thick, and the complexion muddy or spotty; his sleep, too, is heavy and unrefreshing; then, on a sudden, some defluxion or crisis takes place—a purging or spontaneous profuse perspiration or urination,—and within twenty-four hours or so the bodily weight relapses to its normal mean, and the person returns to his more habitual and better-natured self. That such a condition of things is sometimes observable we may admit. In some males epistaxis and hæmorrhoidal hæmorrhages occur with a regularity little short of female periodicity; these spontaneous hæmorrhages, however, are especially prone to manifest themselves in vigorous sanguineous individuals during the spring of the year. As to the morbid imminences which puberty entails on the male sex, I cannot give you better or more general information than is contained in the old aphorisms of Hippocrates. Sect. 3, aphor. 26, 27: "Youths approaching puberty are subject to chronic fevers and epistaxis, inflammation of the tonsils, ascarides, and round worms." 29: "The affections of youth are bloodspitting, consumption, acute fevers, epilepsy."

Sexual relations will be considered by me later on, when I have discussed the physiology of puberty in the female more minutely in its principal feature—periodical menstruation.

Menstruation.—Brierre de Boismont's observations showed that the most ordinary period for the menstrual discharge to last when this function was fully established was eight days, the next most common period was three days, and the next four days. The duration of the catamenia is longer in the inhabitants of towns than in those of the country, and in the small-framed and delicate women than in the robust and tall. It is most energetically and quickly accomplished in those who are essentially most vigorous.

Raciborski divides the life of the mature woman into menstrual and intermenstrual periods, the one lasting at most eight days, the other from twenty to thirty-nine days. You ought further to be informed of an anomalous but not very rare condition that obtains in some women called double menstruation, the discharge recurring every fifteen days with great regularity. The subjects of this anomaly are said to be sexually feeble, seldom make happy wives or fertile mothers, being especially prone to miscarry whenever they become pregnant.

The ensuing facts about menstruation, as to characters and physiological features, I give you upon Raciborski's

authority:—First period of invasion, lasting one to two days, the character of the discharges being brown blood-coloured mucus; second period of intensity, lasting two days, the character being arterial-looking hæmorrhage mixed with mucus, and the physiological concomitant, hæmorrhage into Graafian vesicle; third period of gradual cessation, lasting three days, the character being blood-cells decreasing, mucus-cells increasing, and the physiological concomitant, bursting of Graafian vesicle.

Intermenstrual periods.—First of non-coloured secretion lasting five to eight days, the character of the discharge being clear mucous globules mixed with fragments of epithelium; second, of sharp pain, occurring on or about the eighth day, after all coloured discharge has ceased, with the physiological concomitant of the passage of an ovum through a Fallopian tube; third, of alteration of the vaginal secretions, occurring between the tenth and fifteenth day after the cessation of the coloured discharge, the character being thickened milky discharge, with albuminous cotton-ball-like shreds, and the physiological concomitant, discharge of more or less broken up membrana caduca and ovum.

We learn from this, that menstruation, which term attaches only to the coloured discharge, is followed normally by hypersecretion, which lasts throughout about fourteen days in time, and is possessed of certain characters which appoint different physiological incidents. About the fifteenth day from the commencement of menstruation the escaped ovum traverses the Fallopian tube, this passage being often attended by pain—pain much more distinctly recognised by some women than by others—pain often misunderstood by medical men, and treated under various terms, as neuralgia, ovarian congestion, &c. Both this pain and the natural hypersecretion, with its normal alterations of character, I have thought worth calling your attention to, since the phenomena themselves, from being misinterpreted, have been the source of some feminine bewilderment, and not a few errors in diagnosis.

Leucorrhœa, which women are apt to attach undue importance to as a symptom of some uterine disease, is a very common affection of the inhabitants of dusty, smoky cities, and is frequently due alone to the increased secretion provoked in the mucous membranes by the clogging up of the extensive glandular apparatus of the skin; and may be sometimes quickly and completely cured by the regular employment of hot and Turkish baths.

The period of highest functional activity in the sexual organs is that also which coincides with their greatest proclivity to disease. The largest number of uterine affections befall women between the ages of twenty and thirty-five years. Similarly, venereal discharges, syphilis, orchitis, stricture, &c., occur in males chiefly between the ages of eighteen and forty.

The popular belief that the climacteric epoch is especially fatal to women is not borne out by statistics; that it is a time of life when they are very prone to seek medical advice for ailments, bodily and mental, may be admitted. Uterine congestive affections affect females at or about the menopause—vicarious hæmorrhages, hæmorrhoids, rheumatic gout and pneumonia; and the disposition to the formation of cancers and new growths is apt to manifest itself at this same period of life; it is common enough, too, to observe women of hysterical habit revert to the same fanciful quips and bodily cranks that distinguished their early womanhood.

But Benoiston de Chateauneuf, in his "Mémoire sur la Mortalité des Femmes," shows that between thirty and seventy women exhibit no marked increase of mortality at any one quinquennial period above or beyond what is due to their regular progressive aging: thus, more women die between forty and fifty than between thirty and forty, but more men die than women between thirty and seventy, and the period between forty and fifty is relatively more fatal to men than to women.

As to the mode in which sex influences disease I can only tell you that fevers, zymotic diseases, scrofula, tuberculosis, and diseases of the organs of digestion appear nearly equally common to both sexes. Acute affections of the respiratory organs, croup, pneumonia, acute bronchitis and pleurisy, aneurisms, stone, gout, acute rheumatism, and chronic Bright's disease, occur more frequently in men than in women; whereas certain nervous disorders—madness, epilepsy, chorea, and neuralgia—are more common to women than to men.

I have little time, and still less inclination, to discuss the influence of sexual relations upon the individual health; the sources of information are so meagre and the apparent results are so exactly what might have been anticipated. M. Bertillon, in a communication to the Académie de Paris, made Nov. 14th, 1871, has traced with a very able pen the influence of the married state upon the duration of life and the prevalence of mental disease and of crime.

He arrives at the following results:—That very early marriages—those of males under twenty years—tend to weaken the individual and greatly to increase the per-centage death-rate; for example, from a total of 8000 men whose mortality unmarried, under twenty years of age, scarcely averaged 7 per 1000, the rise is to a mortality of 50 per 1000, these young married men between eighteen and twenty tending, therefore, to die at the same rate as those whose ages ranged between sixty-five and seventy.

Marriage, again, appears injurious to the lives of women when this state is undertaken at any age earlier than twenty-five years. The following facts, tabulated from M. Bertillon's statistics, may be left, however, to tell their own tale:—

Age from twenty-five to thirty.

Males.		Females.	
Married,	6 deaths per 1000.	Married,	10·5 deaths per 1000.
Celibates,	10 " "	Spinsters,	11 " "
Widowers,	22 " "	Widows,	17·5 " "

Age from thirty to thirty-five.

Males.		Females.	
Married,	7 deaths per 1000.	Married,	9 deaths per 1000.
Celibates,	11 " "	Spinsters,	11 " "
Widowers,	19 " "	Widows,	17 " "

Age from thirty-five to forty.

Males.		Females.
Married,	7·5 deaths per 1000.	Not detailed.
Celibates,	13 " "	
Widowers,	17·5 " "	

The table is not so complete as we could desire. Further details appeared to show that from thirty-five to fifty the wives presented a steadily diminishing mortality below that which befell the spinsters and widows, but that the effect of celibacy upon women was much less dismal than upon men. After forty-five the mothers of families enjoyed a greatly diminished death-rate as compared with the spinsters and widows. Insanity, again, is more common among unmarried than married persons, and the former figure more largely among the criminals in all states.

We should be hasty, however, if we deduce as much from these facts as M. Bertillon does. The married state implies, as our own Registrar-General rightly interprets it to mean, comparatively easy circumstances in by far the larger proportion of instances—conditions of life which favour its prolongation, greater comforts, more regular meals, better food, and temperate habits.

Enough. I am well aware how far short of its full hygienic importance my lecture on sex has been. The upshot of my own belief upon the difficult subject of sexual relations is, that while not a few women are happier, healthier, and more useful in their generation single than married, the proper state for most men, nay, for nearly all who at the age of twenty-eight or thereabouts have strength and energy to provide for something more than their own immediate wants and selfish pleasures, is that of marriage.

As medical men, let me further advise you not to delay to grow rich before you marry, nor to select a wife for what she may bring you besides herself. The greatest human happiness is successful exertion, the highest incentive to work is the necessity of providing for those whom nature has decreed ought to be dependent upon you; the surest help towards morality of life is that not impossible she who, well selected, may be expected to halve her husband's sorrows, double his joys, and treble his expenses, who when he is weary will cheer him, and when he is sick will nurse him as none other can.

BOLTON, it appears, is likely to have a new infirmary. £5000 have, it is stated, been offered for the purpose by a gentleman, whose name is not published.

ON THE SIMULATION OF DISLOCATION BY OLD FRACTURES OF THE NECK OF THE HUMERUS.

BY JONATHAN HUTCHINSON, F.R.C.S.,
SENIOR SURGEON TO THE LONDON HOSPITAL.

THE case reported in THE LANCET of Feb. 5th, from the Cardiff Infirmary, is one to me of considerable interest. I cannot doubt, from the particulars given, that Dr. Sheen was correct in thinking that the fracture which his attempt at reduction produced was not due to his violence, but had been present from the first. I have repeatedly endeavoured to claim the increased attention of surgeons to the fact that fractures of the head of the humerus, when united, often so closely resemble dislocations as to deceive even the experienced. The fact is of such importance, both in practical surgery and in its medico-legal aspects, that I shall perhaps be excused again adverting to it. I have little doubt that not a few of the cases in which actions are brought against surgeons for overlooking dislocations into the axilla are cases in which the original opinion was the more correct one. Dr. Sheen will find an extract from a clinical lecture on this subject in the *Medical Times and Gazette* for Jan. 31st, 1875. In that lecture are detailed several cases in which mistakes of diagnosis were made, cases which were really united fractures being taken for unreduced dislocations, and I think he will find that they closely correspond with his own.

In cases of recent fracture the risk of an error is comparatively slight. The swelling conceals the subacromial hollow, the elbow is not held away from the side, and often there is the conclusive sign of crepitus. When union has occurred, however, we find a different state of things. The swelling having gone, a conspicuous hollow under the acromion comes into view; there is a bony mass in the armpit; the movements of the joint are much restricted; the fibres of the deltoid are stretched, and nothing is wanting to complete the picture of dislocation excepting that the elbow is usually not held away from the side. It is well known that the latter is not an essential symptom in dislocation, and may be wholly absent. In the cases referred to there is always somewhat more of thickening about the parts than is usual in simple dislocation, but this, whilst exciting suspicion, is usually allowed to account for any little difficulty which may be encountered in detecting the exact outlines of the bones concerned. The features of dislocation are conspicuous, and it is seldom that much real doubt is felt. The surgeon commences his attempt at reduction, crepitus is produced, and he desists under the impression that he has broken the bone. In reality, the case was from the first one of fracture high up, at or near the position of the anatomical neck, with displacement of the shaft into the axilla, and with or without impaction. If the patient be thin it is possible, I think, with care to make certain that although there is a large subacromial hollow, yet the glenoid cavity is not really empty, and that what is felt in the armpit is not the round head of the bone; but if otherwise this may be impossible. In illustration of the real difficulty I can only say that on more than one occasion I have failed to convince those who had quite as much right to their opinions as myself.

The most instructive of the cases which I have seen was the first, and occurred when I was a student at York. On the post-mortem table at the Retreat Asylum I recognised in the body of a thin old man what looked like a dislocation into the axilla. The late Dr. Thurnham, who was then medical superintendent of that institution, expressed much concern lest some bad surgery should be disclosed, but, nevertheless, kindly allowed me to take out the shoulder. None of us doubted, until the dissection, that it was an unreduced dislocation. It proved, however, to have been a fracture somewhat irregularly through the anatomical neck, with union in such a manner that subsequent movements had forced the head of the bone downwards. Probably there had been some impaction. The case had been treated as fracture in the first instance (a year before the man's death), and Dr. Thurnham, not having had occasion to examine it, was quite unaware that it had been gradually assuming the external appearances of a dislocation.

I will not here repeat the other cases, to which allusion was made in my lecture, but two which have occurred to me during the past year illustrate the subject so definitely that I am induced briefly to relate them. In the early part of last year I was asked to give evidence in a case of action against a surgeon for malpraxis in not having diagnosed a dislocation of the humerus which was still unreduced. Certain symptoms which were mentioned made me doubt whether it had really been a dislocation, but I was met by the apparently conclusive statement that within a month of the accident the patient had been brought to a large London hospital, where dislocation was diagnosed and reduction attempted. Not having myself seen the patient, I was obliged to admit that this was a strong fact, for I added, "If it were of the class I am thinking of, and reduction were attempted within a month, the bone would certainly be refractured." The gentleman who had asked my opinion went back to the hospital to make further inquiries, and found an entry in the books that further attempts at reduction were not continued because the bone had given way. Here, then, we have a case which was supposed to be a fracture at first, and treated as such, supposed to be dislocation a month later, and in which the bone broke at once when force was applied, but which finally assumed such a condition as enabled the patient to bring his action and support it by surgical opinions.

My second case occurred soon afterwards. Two surgeons brought to my house a man who had been treated by one of them, and in whom they now joined in recognising an unreduced dislocation. Nearly a month had elapsed, and they were in great concern about it. The elbow went well to side, and although the hollow under the acromion was deep, I felt almost certain that the case was one of united fracture, with the deformity above described, and not a real dislocation. I saw, however, that neither of my friends was convinced, and as the case might become troublesome, I suggested an examination under chloroform. This was done, and we made a very gentle attempt as if for reduction, with the result that the bone at once gave way, and crepitus was produced. By pressing firmly under the acromion, I was quite assured that the head of the humerus remained in place, but it needed great care to make this out. I felt so certain that when union was again complete the man would be told by someone that the bone was certainly dislocated, that I thought it desirable to be provided with corroborative testimony, and accordingly sent for my neighbour, Mr. Heath, to come in and examine the parts before we put the limb up. Mr. Heath, although at first greatly struck by the resemblance to a dislocation, became convinced, on examination, that it was fracture only. I took the further precaution of putting our opinion in writing, and most carefully explained it to our patient. I do not think it would be possible to imagine a case more closely simulating a dislocation than this, and yet it was most certainly not one. It is to this case, and to the one which occurred at the Retreat, and in which a dissection was obtained, that I would refer those who are inclined to suspect that the real condition is fracture *plus* dislocation. According to my experience this latter combination is very rare, and as the two cases in which it might have been most plausibly suggested were proved, one by dissection, the other by examination under chloroform, to be free from the element of dislocation, I feel justified in setting aside that suspicion in the others also.

Many a surgeon has, I have no doubt, had his reputation most undeservedly damaged by cases of the kind referred to, and I feel sure that it is very important that the possibility of this kind of simulation should be more widely recognised. In order to avoid error, I would strongly advise that all doubtful cases should be examined in the first instance with the aid of an anæsthetic. When the muscles are relaxed the surgeon will generally be able to make quite sure as to what he is dealing with. It will be wise after doing so to give to the patient a written and detailed diagnosis, for he is almost certain hereafter to consult someone else. Anyone seeing such a case for the first time after union has occurred, and feeling unable to remove his doubts, had better give ether and make a gentle attempt at reduction. My experience has been that no harm is done by re-

fracturing the bone, and I have known this happen three or four times, and in all the patient thought himself better off for it in the end. The chief lesson is, however, that it is necessary to be extremely careful in diagnosing dislocation in cases which have been treated as fracture or severe bruise. Especially must we be incredulous if the elbow goes well to the ribs.

In conclusion, I must apologise to Dr. Sheen if I have seemed to suggest doubts as to the correctness of part of his diagnosis. He will, perhaps, more easily forgive my rudeness if I admit that it is a point in which I have several times been mistaken myself.

Cavendish-square.

THE TREATMENT OF ACUTE RHEUMATISM BY SALICIN.

BY T. MACLAGAN, M.D.

A PERUSAL of the literature which bears on the question of the treatment of acute rheumatism is a task from which few would rise with any definite idea as to how that disease is best treated. Purgatives, diaphoretics, sedatives, alkalies and alkaline salts, colchicum, aconite, quinine, guaiacum, lemon-juice, sulphur, mercury, veratria, tincture of muriate of iron, &c., would each be found to have in turn attracted the favourable notice of one or more of those who have directed attention to the subject. Of all these different remedies, not one stands out prominently as that to which we can with confidence look for good results. "Each and every plan of treatment which has been hitherto proposed is regarded by the profession as unsatisfactory."* In accordance with this impression, we find eminent and trustworthy physicians treating the disease on a purely expectant plan—that is, not giving drugs at all, and apparently with results as satisfactory as those which follow the administration of any of the usual remedies.† We have, indeed, no remedy for acute rheumatism—a malady which not unfrequently proves fatal, which is always accompanied by great pain, and is a fruitful source of heart disease.

Under these circumstances, I need make no apology for bringing under the notice of the profession a remedy which, so far as my observations have gone, has given better results than any which I have hitherto tried, and I have tried all the usual remedies over and over again.

In the course of an investigation into the causation and pathology of acute febrile ailments, which has for some time engaged my attention, I was led to give some consideration to intermittent and to rheumatic fever. The more I studied these ailments the more was I struck with the points of analogy which existed between them. On a detailed consideration of these I shall not now enter. Suffice it to say that they were sufficiently marked to lead me to regard rheumatic fever as being, in its pathology, more closely allied to intermittent fever than to any other disease, an opinion which further reflection and extended experience have served only to strengthen.

Rheumatic fever is now-a-days generally regarded as being produced by some cause or agency which is generated within the body. My own investigations into its pathology have led me to reject this view, and to adopt the old "miasmatic" view of its mode of origin, according to which the cause which gives rise to the disease is introduced into the system from without.

Holding this view as to the pathology of rheumatic fever, impressed with the points of resemblance between it and intermittent fever, and bearing in mind that we have in quinine a potent remedy against the latter, there seemed to me good reason for indulging the hope that some remedy would yet be discovered capable of exercising a similar, if not equally beneficial action on rheumatic fever.

In reference to the action of quinine on the various forms of intermittent and remittent fever, and, indeed, with reference to the action of the Chinchonaceæ generally on the diseases of tropical climates (ipecacuanha in dysentery, for instance), there is one fact which has always strongly impressed me—the fact, namely, that the maladies on whose course they exercise the most beneficial action are most prevalent in those countries in which the Chinchonaceæ grow most readily; nature seeming to produce the remedy under climatic conditions similar to those which give rise to the disease.

Impressed with this fact, and believing in the miasmatic origin of rheumatic fever, it seemed to me that a remedy for that disease would most hopefully be looked for among those plants and trees whose favourite habitat presented conditions analogous to those under which the rheumatic miasm seemed most to prevail. A low-lying, damp locality, with a cold, rather than warm, climate, give the conditions under which rheumatic fever is most readily produced. On reflection, it seemed to me that the plants whose haunts best corresponded to such a description were those belonging to the natural order Salicaceæ, the various forms of willow. Among the Salicaceæ, therefore, I determined to search for a remedy for acute rheumatism. The bark of many species of willow contains a bitter principle called salicin. This principle was exactly what I wanted: to it, therefore, I determined to have recourse. It will thus be seen that the employment of salicin in the treatment of acute rheumatism was no haphazard experiment, but had a fair foundation in reason and analogy.

Salicin has long enjoyed a reputation for tonic and febrifuge properties, and was at one time a good deal used as a substitute for quinine. It has of late years, however, gone very much out of use, and now it does not even find a place in the British Pharmacopœia.

The idea of treating acute rheumatism by salicin occurred to me in November, 1874. I had at the time under my care a well-marked case of the disease (Case 1) which was being treated by alkalies, but was not improving. I determined to give salicin; but before doing so, took myself first five, then ten, and then thirty grains without experiencing the least inconvenience or discomfort. Satisfied as to the safety of its administration, I gave to the patient referred to twelve grains every three hours. The result exceeded my most sanguine expectations. For some days prior to its administration the temperature had ranged from 101·8° to 103°; the pulse was 120, and the joints were swollen and very painful. On the 26th of November the alkaline treatment was stopped, and that by salicin commenced. On the following day, after eighty-four grains of salicin had been taken, the pulse had gone down to 100, the temperature to 99·6° (from 102·8° the previous day), a fall of over 3°, the pain and swelling of joints, but especially the pain, had much abated, the joints could be moved a little, and the patient expressed himself as being much better. On the next day (Nov. 28th) the temperature was natural and the pain all but gone, the joints still remaining stiff. From this time he convalesced steadily and quickly.

The case was a very striking one; but, by itself, could not be regarded as proof of the beneficial action of salicin. I was quite aware that cases of acute rheumatism do sometimes unexpectedly improve without any treatment, and had no surety that this was not a case in point. It afforded me, however, strong encouragement to persevere with the salicin. This I did; and all the cases of acute and subacute, and several of the cases of chronic, rheumatism which have come under my care since then have been treated by this remedy, and with results much more satisfactory than I ever got from any other remedy,—the results being most marked and most satisfactory in distinctly acute cases, and least so in chronic cases. Subjoined are the details of eight cases; four acute, three subacute, and one chronic.

CASE 1. *Acute rheumatism.*—William R——, aged forty-eight, was first seen on Nov. 24th, 1874. Had rheumatic fever eight years ago; was then confined to bed for eight weeks. With that exception has always enjoyed good health. Present illness commenced three days ago with shivering and pains in joints, which have increased in severity.

Nov. 24th.—Has anxious, pained expression. Lies on his back without power of motion, the least movement causing intense pain. Skin covered with acid perspiration; tongue moist and furred; bowels moved by medicine; urine scanty and high-coloured; pulse 120, small and regular; temperature 101·8°; heart's sounds normal. To have twenty grains

* Aitken's Practice of Medicine, sixth edition, vol. i., p. 819.

† Dr. Garrod in Reynolds's System of Medicine, vol. i., p. 906.

of acetate of potass every four hours, and ten grains of Dover's powder at bedtime. Food to consist of milk, beef-tea, and light puddings.

25th.—Passed an almost sleepless night. General state unchanged. Has great pain in the joints, especially in the knees, ankles, wrists, and fingers, which are all a good deal swollen. Cannot move. Pulse 120, feeble; temperature 103°; heart's sounds a little muffled; skin bathed in acid perspiration. Continue treatment.

26th.—Had an hour's troubled sleep after the Dover's powder. No change in general condition; lies on his back, quite unable to move; profuse perspiration; pulse 120, feeble; heart-sounds indistinct; temperature 102·8°. Omit potass and Dover's powder; to have twelve grains of salicin every three hours.

27th.—Had four powders (forty-eight grains) before bedtime yesterday. Passed a much better night; slept for several hours in snatches of an hour at a time. Expresses himself as feeling much better, and looks so; says the powders did him a deal of good; can move his limbs a little, but not without pain; joints less swollen; skin covered with acid perspiration; tongue furred; bowels not moved; pulse 100, of better volume, soft and compressible; heart-sounds clearer; temperature 99·6°. Has had eighty-four grains of salicin. To continue it.

28th.—Had a pretty good night; pain nearly gone, though still felt on moving the limbs; joints almost natural in size, except those of the fingers, which are still swollen; skin not perspiring so freely; secretion still acid; tongue cleaning; bowels not moved. Pulse 84, of good volume and character; heart-sounds distinct and normal; temperature 98·5°. To have a dose of castor oil, and to continue salicin every four hours.

29th.—Passed a good night; pains quite gone, and can move the joints freely. Is loud in his praise of the powders, every one of which, he says, he felt do him good; wishes to continue them. Pulse 72; temperature 98·3°.

From this time convalescence was steady and satisfactory.

CASE 2. *Acute rheumatism.*—Mrs. B——, aged thirty-three. First seen on Dec. 18th, 1874. On Dec. 15th was seized with pains in hips and knees, for which she was compelled to go to bed. Had been shivering and feeling out of sorts for two or three days before.

Dec. 18th.—Complains of pain in both knees, and in left wrist, which are all swollen and tender; skin covered with acid perspiration; tongue furred; bowels moved by medicine; urine scanty and high-coloured; pulse 116; temperature 101·6°. To have twelve grains of salicin every four hours.

19th.—Not much sleep; general condition unchanged. Pulse 116; temperature 102·2°. To take a powder every three hours.

20th.—Better night; feels much better; can move knees without pain, though joints are still stiff; is quite free from pain; tongue cleaner; skin moist. Pulse 84; temperature 99°.

21st.—Feels quite well; only a little stiff. Pulse 72; temperature 98·5°.

Convalesced satisfactorily.

CASE 3. *Acute rheumatism.*—Henry B——, aged thirty-four, had rheumatic fever seven years ago; was ill at that time for six or seven weeks.

March 14th.—Two days ago felt generally out of sorts; at night felt cold and shivering and had aching pains in limbs, especially in hip-joints. Complains now of pain in right shoulder, both ankles, and left knee, the ankles and shoulder being most painful; all the affected joints are slightly swollen. Feels just as he did when his fever came on seven years ago. Has anxious expression; skin covered with acid perspiration; tongue thickly furred; bowels moved by medicine. Pulse 112; temperature 102·1°; heart's sounds normal. To have twenty grains of salicin every three hours.

15th.—Rather restless night; ankles and shoulder not so painful, but left knee more so; through some mistake did not have the powders during the night; free acid perspiration; pulse 120; temperature 101°. Continue salicin; heart's sounds normal.—Evening: Feels better; says the powders are giving him much relief. Pulse 100; temperature 99·3°. Continue salicin.

16th.—Passed a much better night; skin moist; tongue less furred; expression much improved. Pulse 80; temperature 98·6°. All the joints free from pain, though stiff and giving slight pain on motion.

17th.—Feels quite well. Pulse 68; temperature 98·2°.

(To be concluded.)

ON THE "DISTOMA CONJUNCTUM" AS A HUMAN ENTOZOON.

BY J. F. P. McCONNELL, M.B.,

PROFESSOR OF PATHOLOGY AND RESIDENT PHYSICIAN IN THE CALCUTTA MEDICAL COLLEGE AND HOSPITAL.

IN THE LANCET for the 21st August, 1875, I published the description of a new species of liver-fluke found in the bile-ducts of a Chinaman who died in this hospital.

Dr. Spencer Cobbold has very kindly interested himself in this discovery, and proposed the name of *Distoma sinense* for the new fluke. This discovery (in September, 1874) has stimulated me to pay still greater attention to the morbid conditions of the biliary canals in our post-mortem examinations; but, although more than 500 autopsies have been conducted since that date, I have not met with another instance of distomata in the liver until within the last fortnight.

On the 9th of January, 1876, in examining the liver of a native patient who had died in the hospital, I again found a large number of flukes in the bile-ducts, and having carefully examined many specimens, I recognise the species as the *D. conjunctum* of Cobbold. Dr. Cobbold discovered this fluke in 1858 in the liver of the American red fox (*Canis fulvus*)*; and Drs. Lewis and Cunningham have more recently found the same fluke on several occasions in the bile-ducts of pariah dogs in this country†; but, as far as I am aware, the human liver has never hitherto been found infested by these parasites, and this I trust will give interest and importance to the following case.

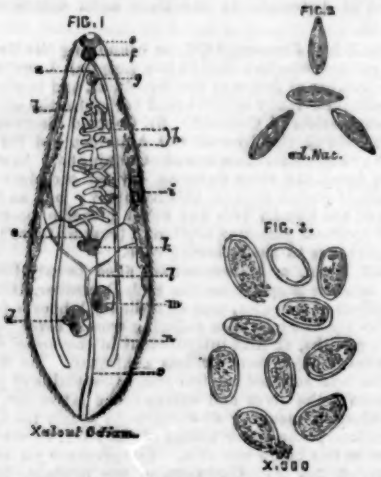
Jamalli Khan, a Mahommedan, aged twenty-four, admitted into the hospital on the 25th December, 1875. He is a resident of Calcutta, and an ordinary labourer (coolie). He states that he had been suffering from "fever" for the last two months, at first intermittent in character, but for the last seven days more or less continued. He is much emaciated and reduced in strength. Complains of pain on pressure over the liver and spleen; the latter can be felt much enlarged, reaching downwards to nearly the level of the umbilicus; the lower border of the liver, however, can only just be felt below the ribs. Temperature on evening of admission 101° F. Conjunctivæ are anæmic, but not jaundiced. Has also a little bronchitis. The fever continued with slight remissions for ten days (January 4th, 1876), the highest diurnal temperature (in the afternoon) varying from 103° to 104° F.; it then abated, but dysentery set in. He began to pass six or eight stools in the twenty-four hours, attended with much griping, and containing varying quantities of blood-tinged, gelatinous mucus. These became more frequent, in spite of treatment, during the next three days, and on the 8th January he was manifestly sinking; passed his evacuations into the bedclothes, became cold and collapsed, and died in this state that same evening.

A post-mortem examination was made on the following morning, thirteen hours after death. All the organs of the body were found more or less anæmic, but exhibited nothing remarkable, with the following exceptions. The lungs towards their posterior margins and bases were dark, but still spongy and crepitant. The spleen was found greatly enlarged, heavy; capsule tense and stretched; substance soft, reddish-brown, irregularly pigmented; weight 1 lb. 13 oz. The liver was of about normal size; its surfaces smooth, the capsule slightly hazy-looking. Hepatic substance firm, but abnormally dark, and the bile-ducts particularly prominent and thickened. Numbers of small distomata escaped from the incisions made into the organ, and could be seen protruding from the dilated biliary canals. The gall-bladder

* Entozoa and the Internal Parasites of Man, p. 20.

† Report of Microscopic and Physiological Researches into the Nature of Cholera. Calcutta, 1872.

was filled with thick greenish-yellow bile, measuring about an ounce and a half, but containing no parasites, and no ova even could be detected on microscopical examination of this bile and of scrapings from the lining membrane of the gall-bladder. The cystic duct was free from obstruction. The condition of the common cholodic duct could not so well be ascertained, as the liver had been removed from the abdominal cavity before anything extraordinary had been detected in its condition, but, so far as it could be examined, it was found patent; the duodenal mucous membrane was well bile-stained, and there was evidence of biliary colouring matter in the fæcal contents of the bowels. On carefully dissecting out, and then laying open, the biliary ducts, in a portion of the right lobe of the liver (the rest being preserved entire), numbers of distomata were found within them, lying singly, flattened, and generally with the anterior extremity, or "oral sucker," directed towards the periphery of the organ, the posterior extremity towards its centre; or in twos, threes, or even little groups of four, variously coiled upon themselves or upon each other. The lining membrane of the biliary canals was found abnormally vascular, its epithelial contents abundant (catarrh?), and among these ova could be detected under the microscope. Sections of the liver, hardened and then examined in glycerine, showed fatty infiltration of the lobular structure, but not to any



Anatomy of *Distoma conjunctum* found in human liver.

a, Genital orifice. *b*, Alimentary canal. *c*, Vitelligene duct. *d*, Left testis. *e*, Oral sucker. *f*, Œsophagus. *g*, Ventral sucker. *h*, Uterine folds. *i*, Vitelligene gland. *k*, Ovary. *l*, Vas efferens. *m*, Right testis. *n*, Alimentary canal. *o*, Water-vascular canal.

advanced degree; the bile-ducts considerably dilated, their walls thick and hypertrophied, but nothing else abnormal, or in any way remarkable. The weight of the liver was 3 lb. In the transverse and descending colon numerous indolent-looking, shallow, pigmented ulcers were found, and in the rectum others evidently more recent and highly injected. The submucous tissues throughout were abnormally thickened. The intestinal contents consisted of only about three ounces of thin yellowish (bilious) fæcal fluid, with small bits of opaque mucus. This was carefully washed and examined, but no flukes were discovered. About a dozen distomata escaped from the liver on making the primary incisions, and quite twice this number was found subsequently within the biliary canals. Only a portion of the right lobe has, as I have said, been dissected, so that it may be confidently stated that probably not less than a hundred of these flukes must have infested this liver. All were found dead, but it must be remembered that the autopsy was performed thirteen hours after the death of the patient. It is remarkable that in this case, as in the one before described by me, no distomata were found in the gall-bladder. The presence of these parasites in the bile-ducts seems to have led to catarrhal inflammation of their lining membrane and abnormal thickening and dilatation of their walls, but there is no evidence of their having caused sufficient obstruction to produce cholæmia, as in the case just referred to, and no marked pathological change could be detected in the lobular structure of the liver.

The anatomy of this distoma has been so well described and delineated by Dr. Cobbold and also by Drs. Lewis and Cunningham, that it would be superfluous for me to enter into any details; but the following particulars seem to be necessary in order to show the identity of the fluke with the *D. conjunctum*. Body lanceolate, anterior and posterior extremities pointed, the latter obtusely. Surface covered with minute spines or hairs. Average length $\frac{3}{8}$" (three-eighths of an inch); average breadth $\frac{1}{10}$". "Ventral" sucker slightly smaller than "oral." Reproductive papilla or genital orifice placed a little above and to one side of the former. Alimentary canal double and unbranched. Uterine folds and ovary placed in the median line, and above the male generative organs, the latter consisting of two very distinct globular bodies or testes. Ova of the usual type—i.e., oval in outline, having a double contour, and granular contents: average length, $\frac{1}{1\,7\,0}$"; average breadth, $\frac{1}{3\,5\,0}$".

The only point of note is that the average length of these flukes is greater than that of the same species found by the authors above referred to. The *D. conjunctum* in the American fox, and in the pariah dog, has an average length of $\frac{1}{4}$"; only two or three specimens of this size were found in this liver, and these showed evidences of immaturity; a few were also found $\frac{1}{5}$" in length; but the great majority exactly $\frac{3}{8}$". The anatomical characters are otherwise precisely identical.

In conclusion, I would remark that the fact of these distomata having been found in the pariah dog of this country, and now in the human liver, points to a common source for their introduction into the system.

Calcutta.

ON AQUAPUNCTURE.

BY R. CLEMENT LUCAS, B.S. LOND., F.R.C.S.,
ASSISTANT-SURGEON TO GUY'S HOSPITAL.

IN a paper read before the Scientific Congress at Nantes, in August last, Dr. Léopold Lafitte drew attention to the value of the subcutaneous injection of pure water for the relief of pain. He states that he was induced to try this simple remedy from having observed, when in Paris in 1872, the good effects produced by it in a case of acute rheumatism under the care of M. Dieulafoy. In the opinion of the author of the paper it is an expedient of great value, and he mentions many cases in which he had adopted it with marked success; one especially, a case of acute lumbago, was immediately relieved by the hypodermic injection of two grammes of pure water. Dr. Lafitte refers to an article in the "Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques," entitled Douleur, by M. Georges Dieulafoy, as containing the only written account of this mode of treatment. In this essay, published in 1869, Dr. Dieulafoy concedes the credit of originating the treatment to M. Potain, and speaks enthusiastically of its efficacy. Indeed, after dismissing all other methods for the relief of pain in a few lines, he devotes a whole page to the discussion of its merits. "D'après les expériences très nombreuses, que nous avons recueillies," he says, "voici ce qu'on peut avancer. Quand un individu est atteint d'une douleur, quelque soit son siège et quelle soit sa nature, on peut sans inconvénient combattre la douleur par les injections d'eau, et dans un grand majorité des cas le résultat est immediat."

Subsequent to the publication of Dr. Lafitte's paper, Dr. Lélut has given his experience of the same treatment in a letter to *L'Union Médicale* of October 5th, 1875. His short communication is rendered interesting by an account of the incident which led him unwittingly to employ so simple an expedient. His servant had by accident overturned a bottle containing morphia in solution, which had been left upon his desk, and, wishing to conceal her misfortune, refilled the bottle with water. The following day Dr. Lélut employed the liquid from the bottle for a subcutaneous injec-

tion in a patient suffering from sciatica, in whose case he had previously injected morphia. The result was that the patient was relieved, and delighted to find the pain removed without the nausea and sickness that had been excited on former occasions. Astonished at the different effect produced by this injection, Dr. Lélut was led to examine the contents of the bottle, and was surprised to find that it contained only pure water. He repeated the experiment upon other patients, and found that it invariably gave them relief without inducing the unpleasant nausea caused by morphia.

Dr. de Labordette and others have also recorded their experience of aquapuncture in the same journal. A notice of Dr. Lélut's communication appeared in the *British Medical Journal* of November 27th, 1875; and was followed in the succeeding number by letters from Drs. Burney Yeo and Griffith claiming priority in the hypodermic use of water for the relief of pain. Both these gentlemen mention cases in which they resorted to this expedient with success in 1868. It is probable that this simple experiment has occurred to the minds of not a few. I can, for my own part, testify to its having been a common practice among the dressers at Guy's Hospital in 1867, who, in cases of supposed malingering or imaginary pain, were in the habit of substituting water for morphia. The relief that not unfrequently followed this practice used to be regarded by them as proof of the imaginary nature of the complaint—a deduction which the systematic experiments of MM. Potain and Dieulafoy would seem to prove incorrect.

In the following case of sciatica the subcutaneous injection of water was employed at my suggestion, and seemed to bring about a very rapid cure. The case is reported by Mr. Grimwood, and was under the care of Dr. Pye-Smith, to whom I am indebted for permission to publish it.

W. M——, aged fifty, a labourer, was admitted into Stephen ward, Guy's Hospital, on Jan. 6th, 1876. He was born of a healthy family, and has generally enjoyed good health, but at the age of sixteen he suffered from an attack of rheumatic fever. His father died of dropsy. He is a married man, and has four sisters living and healthy.

About twelve months ago, when working at the butts at Woolwich Arsenal, he one day got wet through. On the following day he went to work as usual, and worked until dinner-time, but on attempting to rise after dinner he experienced a severe pain in the loins, which compelled him to go home to bed. He was attended by a medical man, and recovered after a time sufficiently to resume work of a lighter kind; but he did not lose entirely the pain in his left loin. He noticed that whenever he strained his left foot he was seized with cramp and suffered from a sensation as of pins and needles running up his leg. For about a month he has suffered from severe pain in his left hip, which is gnawing and continuous, but comes on sharper at some times than at others; it never entirely ceases. He also suffers at intervals from pain in the knee and on the dorsum of the left foot.

He is a tall, strongly-built man, with a ruddy countenance, but bears a pinched and anxious expression. He lies upon his back with his left leg drawn up and adducted, a position which gives him the greatest ease from pain. The percussion-note over the chest is good and the breath-sounds are normal; the heart-sounds are indistinct but clear; liver and spleen normal; tongue clean; appetite good; bowels regular. His urine yields a slight deposit, but contains no albumen or sugar; sp. gr. 1030. Temperature normal. He was ordered a mixture containing magnesia and sulphate of magnesia, to be taken twice a day, and a Dover's pill every night.

Jan. 11th.—The patient has not experienced any relief from the pain. A blister four inches square was applied over the sacro-iliac articulation, where the chief pain seems to be situated, and the following mixture was ordered to be taken three times a day:—Iodide of potassium, ten grains; bicarbonate of potash, ten grains; infusion of calumba, one ounce.

13th.—Patient has less pain in the hip, but has suffered pain in the leg and ankle this morning.

16th.—The pain in the leg and ankle is no better. A slight rash has come out upon his face, probably caused by the iodide of potassium. He feels well in health; temperature normal. Ordered a subcutaneous injection of a quarter of a grain of morphia every night.

17th.—The patient is better. He says he has no pain in the hip or thigh, and has pain in the foot and ankle, which he can move about a little.

18th.—A blister four inches in length by one in breadth was ordered to be applied along the course of the great sciatic nerve.

21st.—Patient is better. The pain is confined to the foot and half-way up the leg; it affects the big toe and the two next. He has had no coldness of the skin since the use of morphia injections, and says he can move the leg more freely.

24th.—The pain is less in the foot, and the patient can bend the toes, which he was unable to do before. He complains of pain of a darting character, which shoots from the heel into the groin. He has a slight headache to-day.

25th.—The pain in the hip and foot having returned, Dr. Pye-Smith desired that the patient should be examined by Mr. Lucas, who gave the following report: "The left leg is semiflexed and adducted. The muscles of the left leg and thigh, and those of the gluteal region on that side, are considerably wasted. The left leg below the knee measured three-quarters of an inch less than the right on the same level. No pain is excited by percussing the heel or great trochanter. The movements of the hip-joint are quite free, pain only being caused by extreme flexion; and this is probably due to stretching of the great sciatic nerve, as he complains at the same time of a sensation of pins and needles down the back of his leg and foot. There is no thickening about the hip. There are some enlarged glands in the groin, produced, I have no doubt, by the irritation of the blisters. I believe the symptoms have their origin in the great sciatic nerve, and should recommend the subcutaneous injection of half a drachm of water three times a day."

The injections, which were of cold water and introduced into the arm, were given as follows: Jan. 25th, one at 9 P.M.; 26th, one at 4 P.M. and one at 9 P.M.; 27th, one at 10 A.M., a second at 4 P.M., and a third at 9 P.M.; 28th, one at 10 A.M.

He experienced relief from the first injections, and on the 28th was sitting up and quite free from pain. He says the injections first caused pain at the site of introduction, and were followed after a time by a warm perspiration and relief of the symptoms in the hip and leg. The injections were omitted on this day, and the following mixture was ordered to be taken three times a day: ten minims of dilute sulphuric acid, one drachm of compound tincture of chinchona, and an ounce of decoction of chinchona.

31st.—The patient has had no return of the pain. The glands in the groin are still slightly swollen. He left the hospital to-day, feeling quite well.

Remarks.—There can be no doubt that this man's sufferings were perfectly genuine. There was wasting of the muscles of the gluteal region, as well as of the leg and thigh of the affected side, and the leg was semiflexed and adducted. Moreover, the percussion and manipulation, to which he was subjected, evoked from him none of the exaggerated complaints that would most certainly have emanated from a malingerer; and, further, he throughout expressed himself as being desirous of returning to his employment.

It will be seen from the report that he had been severely blistered, had taken iodide of potassium regularly, and received an injection of morphia every night for some time; and under this combined treatment he had improved. But a return or increase in the pain induced Dr. Pye-Smith to ask me to examine the patient for more substantial disease. The effect of the injection of water was, according to the patient, to cause severe pain at the seat of introduction, followed by perspiration and relief of pain in the affected limb. It may be, as Dr. Pye-Smith suggested, that the cure had already been wellnigh effected, and that the injections simply distracted the patient's attention from the part. I intended that the injections should be inserted over the seat of pain, but it is perhaps as well that the misunderstanding which led to the introduction of the injections into the arm should have taken place, although it renders more difficult any attempt to explain the manner in which relief was brought about. Dr. Lafitte, injecting always over the painful spot, accounts for the relief afforded by supposing that the fluid introduced compresses the peripheral extremities of the painful nerves, and so brings about their temporary paralysis. It is evident that no such explanation is applicable to the foregoing case, as the injec-

tions were introduced at a distance from the seat of pain. There remain but two other ways of explaining the effects produced: either the local irritation causes such central excitement as to dull the perception of the sensorium to lesser pains, or the effect is throughout a mental one, which may be compared to the relief sufferers from toothache so often obtain on approaching the house of a dentist. The explanation of the result, however, is of less consequence than the result itself, and may be allowed to wait until a certain consistency of effect has been established as occurring from the subcutaneous use of water. It is scarcely to be expected that all pains may be equally relieved by this one method, as Dr. Dieulafoy asserts. Numerous failures must surely occur; and, if I might forecast the verdict of the future, I would anticipate that nerve-pains—neuralgias, sciatica, and the like—are more likely to be relieved by the remedy in question than the sufferings incident to chronic progressive diseases, such as cancer. As to the manner of injection and quantity of fluid to be introduced, Dr. Dieulafoy recommends that the seat of greatest pain should be searched for, and eight or ten drops of water be there injected. This, he says, may be repeated ten, twelve, or fifteen times at one sitting, if necessary. Dr. Lafitte, in a letter to *l'Union Médicale* of Oct. 5th, 1875, says that he injects two grammes and then waits a couple of minutes, and if the pain be not relieved he then injects two grammes more. Even five or six syringefuls may be sometimes injected. He thinks that less than two grammes or more than ten should never be injected. He further insists strongly on the necessity of injecting over the painful part: "Le seul point important à noter et à retenir c'est de faire l'injection *au point douloureux*. Tout le sécret d'une bonne opération est là." The operation itself is so simple and so entirely free from danger that positive proof or disproof of its efficacy in relieving pain ought soon to be accumulated.

In conclusion, if the foregoing case should lead to an impartial and systematic investigation of the value of aquapuncture, in England, the object of its publication will be accomplished.

St. Thomas's-street, S.E.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

TWO CASES OF BELLADONNA POISONING, TREATED BY JABORANDI; RECOVERY.

(Under the care of DR. SYDNEY RINGER.)

IN some cases of belladonna poisoning that were recently treated in this hospital, opportunities presented themselves for testing the action of jaborandi on persons profoundly under the influence of belladonna. As is now well known, jaborandi in a healthy person produces copious perspiration and profuse salivation, contraction of the pupil, and approximation of distant vision; whereas the action of belladonna, as far as these sets of symptoms are concerned, is quite opposite. After a poisonous dose of belladonna the skin becomes dry and flushed, the throat and mouth feel parched, the pupils dilate, and the near point of distinct vision is removed further from the eye. By the following notes it may be seen that while the patients were under the influence of belladonna the physiological action of jaborandi could not be produced by even very large, and what under normal conditions would have been dangerous, doses of the drug. Belladonna seems to be more powerful and intense in its action than jaborandi. A patient in the same ward as the first of the undermentioned cases was made to sweat and salivate profusely by the subcutaneous administration of one-third of a grain of pilocarpine. One-hundredth of a grain of atropia was then injected under the skin, and in five minutes both the sweating and salivation had almost entirely ceased. After the belladonna had been eliminated from the patients whose cases are recorded below, jaborandi was found to have its ordinary effect.

The first case here narrated is interesting on account of the prolonged delirium, the muscular rigidity, and the late occurrence of the bladder symptom.

John C——, aged sixty-four, on Dec. 24th, at about 12.30, drank, by mistake, about one or two drachms of belladonna liniment. Shortly afterwards, on his wife's return home, he said, "I have taken some stuff out of that bottle," and then became insensible, with rigidity of the body and clenched teeth. He was taken to the hospital at 1.30, and was treated by Mr. Houghton in the out-patients' room. The patient's arms, and especially his legs, were rigid, so that he was with difficulty kept in his chair; the pupils were dilated. He could not answer questions, though he seemed to understand them.

Mr. Houghton used the stomach-pump, and injected by it three drachms of ipecacuanha wine, and afterwards gave one-third of a grain of pilocarpine hypodermically. At 2.50, two hours and twenty minutes after the poisoning, he was admitted into Ward 4. The patient was quite unconscious, breathing with a loud snoring noise, but without puffing out the cheeks; the skin, lips, and mouth were dry. Pulse 104; respiration 22; and the pupils rather more than two-thirds dilated. Three hours and twenty minutes after the accident the pupils were rather less dilated, and since the previous note contractions and twitchings of both arms had occurred, the fingers being clenched by tonic contractions of the muscles, and the elbows rigid. In eight hours and a half he became slightly conscious. The legs were rigid from tonic contraction of the muscles. In ten hours and a half unconsciousness began to give way to fussy, busy delirium. He constantly muttered, kept picking the bedclothes, and tried to get out of bed. He stared wildly about him, and was very suspicious. His skin, mouth, and tongue were still very dry. He continued delirious, but not violently, all that night and the next day.

On the night of the 25th, thirty-six hours after the poisoning, he became so very violent that it became necessary to tie him down in bed. He stared wildly about him, struggled to get out of bed, shouted at the top of his voice, "Police!" "Murder!" and suffered from various hallucinations, thinking he was in prison, or was about to be murdered. He was very suspicious, refusing to take food, thinking it was poison. In fact, the delirium was exactly like that of delirium tremens, and as the man, at intervals of three weeks or a month, had drunk rather hard, it was impossible to say whether the delirium was due to belladonna or to the effects of alcohol.

The delirium continued violent during the third day, so that he was put into the strait-jacket. He continued in the same state during the night, so that at 2 A.M. one-fourth of a grain of morphia was injected hypodermically.

On the fourth day he was still delirious, but the strait-jacket was removed, and twenty grains of bromide of potassium, with thirty grains of chloral, were given in a pint of stout. He soon fell asleep, and awoke in the evening free from delirium, and then for the first time complained of urgent desire to pass water, being able to pass only a few drops at a time. This continued throughout the night and the fifth day. There was no retention. He slept soundly on the fourth night, and was quite well next day.

Throughout this case there was no rash; the pupils were rather widely dilated, but much less so than is usual in a severe case of belladonna poisoning.

The following is a table of the temperature (taken in the axilla), the pulse, and respiration:—

Date.	Hour.	Temp.	Pulse.	Resp.	Remarks.
Dec. 24th	2.50 P.M.	—	104	22	Pulse full, regular, and moderately strong.
	3.20	98·3°	102	26	
	3.50	—	100		
	11.30	—	96		
25th	10 A.M.	98°	88	30	
	11.30 P.M.	—	104		
26th	10.45 A.M.	99·2°	100	24	Pulse considerably weaker.
	10 P.M.	—	108		Pulse weak and compressible.
27th	8 P.M.	99·7°	86		Pulse rather stronger and fuller.

Date.	Hour.	Temp.	Pulse.	Resp.
28th ...	10 A.M. ...	99·8° ...	84 ...	25
	7 P.M. ...	99·6° ...	...	
29th ...	10·15 ...	99·6° ...	82 ...	26

This patient was treated with pilocarpine, the alkaloid of jaborandi, which in so many ways is the antagonist of belladonna. At 2.15 one-third of a grain was injected hypodermically; this was repeated at 3.15, at 3.50, and at 5 o'clock, so that one grain and a third was injected hypodermically within two hours and forty-five minutes, yet without any apparent effect on the symptoms. For a few seconds after the third injection it was thought that the skin became a little moister. However, the perspiration ceased almost immediately. In almost every instance one-third of a grain of pilocarpine induces in ten minutes to a quarter of an hour free perspiration and salivation, lasting often several hours. Four times that quantity was used without effect, affording a good example of the antagonism between atropia and pilocarpine. In order to test the specimen of pilocarpine, one-third of a grain was injected under the skin of another patient, and in a quarter of an hour he was bathed in perspiration and his mouth filled with saliva. Having tested the activity of the drug, and wishing to save the patient the annoyance arising from the salivation and perspiration, one-hundredth part of a grain of atropia was injected under the skin, and in five minutes the perspiration and salivation had almost ceased. To learn if the poisoned patient was less subject to pilocarpine than other persons, after his recovery one-third of a grain of pilocarpine was injected, and in twenty minutes his skin was drenched with perspiration. Although these two drugs are in so many ways antagonistic, in this instance any benefit arising from the pilocarpine could not be detected, but perhaps the good effect would have been apparent had larger doses been given or the medicine repeated more frequently. In this case well-marked rigidity occurred, a very unusual phenomenon in belladonna poisoning. Belladonna, as is well known, poisons the motor nerves, and thus causes weakness; but Dr. Fraser has experimentally shown that it is a stimulant to the spinal cord, but, owing to its paralysing effects on the motor nerves, its tetanising effects through its influence on the cord are not usually displayed. In frogs, after the effect on the motor nerves has passed away, the influence on the cord becomes apparent; moreover, if, previous to poisoning, one iliac artery is tied so as to protect the motor nerves of that limb from the poison, on irritating the animal tetanic contractions are excited in the protected limb. Were the attacks of rigidity which occurred in this patient due to the action of the belladonna on the cord?

The previous notes were kindly taken by Mr. Perry, the following by Mr. T. C. Fox, the resident officer in charge of Dr. Ringer's patients.

Mary B——, aged four years, was brought to the hospital at half-past twelve on September 1st, 1875. Five minutes before her admission she drank some belladonna liniment, over half an ounce, if her mother's statements are correct. Almost immediately after taking the poison "she reeled like a drunken man," and struck her head against a wall.

On admission, she was drowsy, but conscious. The skin was very dry; the pupils widely dilated; face flushed. The skin flushed more readily than naturally on irritation. She soon fell asleep, and woke three hours and a half after the poisoning, when she yawned and sneezed frequently. After this she fell into a doze, and woke in a second or two with a cry, and with slight convulsive movements. She tossed about a good deal. In four hours and a half she was very delirious, had unpleasant illusions, and screamed from fright. She followed with her eyes, in a rapid manner, imaginary objects. She tried to talk, but her words were inarticulate. There were slight convulsive startings. She did not know her mother, nor could her attention be attracted by objects held before her eyes. The skin was very dry. At about this time a deep, sharply-defined uniform blush appeared on her face, neck, arms, trunk, and thighs. The delirium continued, but in about eleven hours the delusions appeared to be of a more pleasing character, and she occasionally laughed. At this time she would try to take hold of objects, but could not, from want of control over her arms and hands. The startings continued. In seventeen hours the delirium had almost ceased. In twenty-three hours she fell into a sound sleep, which continued five hours, when she awoke free from delirium. Eight hours and a half after the poisoning, the flush had greatly abated. Twenty-nine hours after the accident she was discharged quite well, with the exception of the dilated pupils.

Time after poisoning.	Temperature.	Pulse.
25 minutes.	—	150
30 „	—	140
55 „	—	140
1 hour 40 min.	—	112
2 hours 5 min.	—	110
4½ hours	99·4°	130
11 hours	99·2°	—
22¾ hours	—	96

Pilocarpine was hypodermically injected, in quantities amounting altogether to one grain, on five occasions, the first being twenty-five minutes and the last eight hours and a half after the poisoning.

The pilocarpine did not induce either perspiration or salivation, but this need not excite any surprise; neither does it afford an instance of antagonism between this alkaloid and atropia, for children are very tolerant of both these substances; and Dr. Ringer found that even large doses of pilocarpine generally given to adults do not produce in children either perspiration or salivation.

Another little girl, aged two years, who was playing with the former child, took a poisonous dose of the belladonna liniment. In six hours afterwards she was very drowsy, and became delirious, and a flush appeared on the face and neck which lasted an hour and a half. The child soon recovered.

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.

CASE OF HÆMATOKOLPOS; OPERATION; RECOVERY.

(Under the care of Mr. LAWSON TAIT.)

E. T——, aged eighteen, had menstruated regularly for two years, but the discharge was very scanty and accompanied by agonising pain. She had applied at various institutions without obtaining relief.

Vaginal examination, made under ether, revealed a mass occupying the pelvis, in the position and about the size of the uterus pregnant as far as the third month. No cervix could be made out, but at one point, close to the rectum, there was a small circular patch about the size of a shilling, where there was pseudo-fluctuation, and the feeling was as if a membrane were stretched tightly over the mouth of an elastic bottle.

Believing this to be the cervix uteri, Mr. Tait freely incised it, and thereby evacuated a large quantity of the usual treacly fluid which represents retained menstrual blood.

The patient recovered rapidly, and the wound has remained patent, so that she now menstruates without the slightest pain.

The only puzzling element in this case was the history, for it is beyond doubt that every month a menstrual discharge took place, and if great weight had been attached to this the diagnosis would have been greatly complicated.

As the patient was perfectly virginal, it cannot be supposed that the closure of the os was due to injury

HYDATID TUMOUR OF KIDNEY; TAPPING FOLLOWED BY COMPLETE CURE.

(Under the care of Mr. LAWSON TAIT.)

S. G——, aged thirty-five, had noticed a tumour growing on right side for thirteen weeks. It was (May 12th, 1874) about the size of a cocoa-nut, situated in the position of the right kidney, very movable in an up or down direction, but very slightly towards either side, distinctly multicystic, and painless, and there was a line of intestinal resonance between it and the liver. It was diagnosed as a cystic tumour of the kidney, probably of an hydatid character.

The patient was under notice for a year, during which time the tumour underwent no change. But on the 14th of May, 1875, it was found to have greatly increased in size, and to be somewhat painful. On the 24th it had reached the size of an adult head, and was very tender to the touch, and the patient's urine, which had been up to that time

perfectly normal, was slightly albuminous. The tenderness diminished somewhat till the middle of June, when she was seized with a violent spasmodic pain, running down in the direction of the bladder, and she was voiding at short intervals small quantities of ropy, purulent, and very offensive urine. It became evident that the cyst had ruptured into the ureter, and it seemed improbable, from the nature of what was coming away, that the natural effort at cure would be, unaided, sufficient. Mr. Tait therefore punctured the cyst with a large aspirator needle, and removed three quarts of the same fluid which was passing by the ureter. It was found to contain numerous echinococci.

The kidney colic ceased immediately, the cyst never refilled, nor have any pus or echinococci been since found in the urine; and the patient was, in December last, perfectly well and free from every trace of the tumour.

BRADFORD INFIRMARY.

CARCINOMA OF THE CAUDA EQUINA.

(Under the care of Dr. REGINALD G. ALEXANDER.)

THE following case is of great pathological and clinical interest, from its rarity.

Emma E——, aged eighteen, unmarried, was admitted into the hospital November 14th, 1871. She stated that she had always been delicate, but able to follow her occupation as a winder at the mill. In November, 1870, she was suddenly seized whilst at her work with pain "like the cramp" in the left leg. She continued to work until Christmas, when she was laid up for thirteen weeks; but towards the end of March, 1871, she began work again, and continued it until November, 1871, when the pain returned, and she sought admission into the infirmary.

The girl had a clear bright complexion, and a healthy aspect; she was rather weak, but complained of nothing but pain along the course of the left great sciatic nerve, the pain sometimes reaching to the ankle. Urine acid, sp. gr. 1025, no albumen. Bowels constipated. Ordered five minims of tincture of aconite in an ounce of quinine mixture, and ten grains of colocynth and hyoscyamus pill at night.

Nov. 23rd.—The pain increasing daily; fifteen minims of solution of morphia ordered to be injected subcutaneously, which gave immediate relief.

Dec. 11th.—Bowels obstinately confined. A hard tumour can be felt occupying the space to the left of the umbilicus and below it—i.e., in the left inguinal region, and also extending a little above that locality. Ordered an enema to be given by the long rectum tube, and to be followed by a dose of castor oil. A copious scybalous stool. From this time the tumour increased in size, the pain continued, and was very severe when the subcutaneous injections of morphia were not given at least twice a day, and the quantity had to be increased to half a grain of the acetate. The patient rapidly lost flesh, and her face became inexpressibly painful, anxious, and cachectic. She gradually sank exhausted, and died on the 12th of May, 1872.

Autopsy, forty-nine hours after death (by the present senior house-surgeon, Mr. W. Lake Roberts).—Body extremely emaciated and covered with purple petechiæ; walls undergoing decomposition. On opening the abdomen, an ovoid tumour presented itself, occupying the true and false pelvic cavities, and extending in an upward direction to an inch above the umbilicus; a portion of the small intestine was adherent to its upper border; to its sides were adherent respectively the cæcum, portion of the ascending colon, and descending colon. The tumour in its entirety was strongly adherent to the neighbouring structures, requiring considerable force to detach it from the spine and pelvis. On the left side the anterior crural nerve was flattened and adherent to the tumour, as also were several branches of the lumbar plexus. Upon dissecting further, the tumour was found to arise by a pedicle, an inch long and quarter of an inch in diameter, from the lower part of the spinal column, emerging into the pelvic cavity from between the last lumbar vertebra and the sacrum. The uterus was flattened and pushed up close behind the symphysis pubis. The tumour weighed 5 lb. 3 oz., and on making a section it was found to consist of hard and soft parts presenting the appearance of soft cancer; in one part there was a cyst containing 2 oz. of fluid. The liver was fatty, and it, together with the intestines, were much displaced, encroaching considerably on the thoracic cavity.

Remarks.—Malignant disease, when it occurs amongst young persons, is generally the medullary form, as in the present instance, and, although it is common in the brain, it is rare in the spinal cord. Rokitansky says he has only seen one such case. The pain which the girl suffered was excruciating, but the subcutaneous injection of morphia completely and instantly removed it, rendering life again endurable. The effect of the morphia lasted about eight hours after each injection.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

THE ordinary meeting was held on Friday, Feb. 25th, Sir W. Jenner, President, in the chair. The cases shown and papers read were of more than ordinary interest, and the unusual course of prolonging the meeting half an hour beyond the proper time was adopted, in order to allow of a discussion on Dr. Duffin's paper on Menière's disease, in which Drs. Hughlings Jackson, Buzzard, Ferrier, and others took part. The proceedings included also a discussion on the pathology of leukæmia, and the value of phosphorus in its treatment; and the exhibition of a case of recovery from bulbar paralysis, of very rare nature, both of which excited much interest.

Dr. DYCE DUCKWORTH exhibited a patient with Morphœa, and gave the following account of the history of the case:—The patient, a clerk, twenty-six years of age, was first seen about four years ago, when he stated that, having suffered from headache for some time previously, about six weeks before he had observed an alteration in the colour and texture of the skin on the left side of his forehead. When first seen, there was a smooth, shiny, slightly depressed patch, which could not be pinched up above the left eyebrow, and extending upwards over the forehead; which, beginning at a quarter of an inch above the eyebrow, gradually involved the scalp, the hairs of which had fallen out. The patch was dry, no perspiration occurring when other parts of the face perspired; the sensation was blunted over it, but not lost. The patient was at first treated with quinine. The patch slowly grew, and a year later was still increasing, both in width and upwards towards the vertex. In August, 1873, it was still larger, reaching the inner edge of the eyebrow, and approaching more nearly the vertex. It was of dark raw sienna colour, with vascularity here and there, and it was now raised above the surrounding surface. Some fine hairs grew near the centre of the patch. Subsequently the patch became more depressed, especially at the margins, and the colour faded, only slight pigmentation remaining here and there, and the patch being warmer and more vascular than the surrounding skin. Dr. Duckworth remarked that the case was a typical one of morphœa. It was a curious fact that the disease was confined to the left side in all the six cases which he had found recorded in English literature—this being the seventh. In no case, so far as he was aware, had the disease occurred on the right. It appeared also to be limited to the region of the supraorbital nerve. These cases were quite distinct from ordinary scleroderma, and he saw no reason for allying them with true leprosy. The ultimate prognosis was, he thought, favourable, though six or seven years might elapse before cure.—Dr. HILTON FAGGE took an interest in these cases, especially from the fact that the models from two of the recorded cases are in the museum of Guy's Hospital, and he had seen a third case. He agreed with Dr. Duckworth that a disease so distinctly localised to the region of one nerve—namely, the fifth—should have a distinct name; for although the disease resembled diffuse and scattered scleroderma in some

of its features, no other localised scleroderma was known. As to the pathology of the affection, he did not know whether it was due to a definite fibroid growth in the skin, as in the case of ordinary diffused scleroderma; if so, it would be an example of what was at present a doubtful occurrence—namely, the atrophy and absorption in course of time of a true fibroid tissue, as distinguished from a small-celled growth.

Dr. DOWSE exhibited a patient who had recovered from Bulbar Paralysis. The patient, a young man aged twenty, was admitted into the Central London Sick Asylum on June 30th, 1873. He was one of fourteen children, nine of whom are living, five having died young of convulsions, the father is living and healthy, but the mother died of apoplexy. The patient was healthy till nine months old, when he began to suffer from fits, and continued to suffer from them till he was two years old, growing up delicate. When sixteen years of age he became subject to a series of epileptic seizures; the attacks were frequent, but of short duration, sometimes thirty occurring in twenty-four hours. Then followed a general paralysis involving the medulla and spinal cord, implicating all the nerves except the first, second, third, fourth, and sixth. There was trismus, with complete anæsthesia of the parts supplied by the sensory division of the fifth, and absence of motion and sensation in the trunk and the extremities. The facial muscles were devoid of voluntary power, but the portio mollis of the seventh was unaffected. The tongue was motionless, and the first and second acts of deglutition could not be performed. There were sudden attacks of vomiting, hurried and panting respiration, and quick and irregular action of the heart, giving evidence that the vagus was implicated. These conditions continued nearly unaltered during the four years before he came under Dr. Dowse's care. At that time the intelligence and special senses were unaffected, but there was inability to co-ordinate the labial muscles, and he was absolutely dumb, although the vocal cords acted well. He was beginning to recover power over the muscles of mastication, and there was some return of power in the upper extremities. Improvement occurred in the following order: first the sensory division of the fifth, then the seventh, and then the nerves supplying the tongue and palate; the sensory and motor paralysis continuing almost unaltered for nearly a year in the lower limbs, with considerable muscular atrophy. The treatment employed consisted in the use of the continued electric current to the paralysed parts, and the injection of one-twentieth of a grain of sulphate of atropia and one-sixth of a grain of strychnia daily into the lower limbs, the division of the Achilles tendons, and the internal administration of cod-liver oil, quinine, and phosphorus. The recovery of power over the tongue was almost immediate, whilst the lower limbs took some months to regain their power; this fact bearing out the observation of Duchenne that in bulbar paralysis the tongue becomes paralysed without atrophy, whilst the muscles of the limbs undergo fatty degeneration and waste. The patient gradually but almost completely recovered. As to the nature of the lesion which gave rise to these symptoms, Dr. Dowse did not pretend to decide, but he suggested that possibly venous extravasation might have occurred as a result of the fits. He commented also on its difference from an ordinary case of labio-glosso-laryngeal palsy, with which general paralysis might coexist, but the bulbar paralysis was usually permanent.—Dr. HUGHLINGS JACKSON observed that the case was a very valuable one, and one of an extremely rare character. He had never seen a patient with bulbar paralysis recover. As to the articulation, he had tested the patient; although the palate was not perfect in its action, it acted fairly well. Dr. Dowse was to be congratulated on the success of his treatment of the case.

Dr. MOXON read a paper on two cases of Leukæmia. The first was that of a man forty-five years of age, a cook at a club, who was in good health till December, 1874, when he began to suffer from pain in the right hypochondrium, followed by sudden jaundice six weeks later. He came into Guy's Hospital in March, 1875, and stayed in the hospital until May. At that time the white blood-corpuscles were from twelve to fifteen times as numerous as in the healthy state; the spleen was large and firm, and readily felt below the ribs. There was no albumen in the urine. Phosphorus was given in the dose of one-fiftieth of a grain three times daily from June to September. It had no effect on the proportion of white blood-corpuscles, although they did not increase in number. The blood presented curious characters under the microscope: it coagulated slowly, and seemed as if it were greasy, having numerous clustered fibres or threads here and there; there were numerous single or clustered granules of smaller size than red blood-corpuscles seen in the field. The patient still suffered from slight jaundice, and the motions were pale. He was readmitted in November very ill, and symptoms of acute peritonitis set in, and the temperature, which had previously been about 99°, rose to 103·8°, collapse and torpor coming on. The blood was examined on a warm stage by Mr. Golding Bird; it was found that the red blood-corpuscles ran together and became indistinguishable from each other, but the white possessed amœboid movements, as in the normal condition. After death it was found that a mass of cancerous new growth had invaded the liver in the region of the portal fissure; the duodenum and the head of the pancreas, the bile-ducts and gall-bladder were dilated and contained blood-clot; and a cyst adjacent to the gall-bladder also contained blood-clot. The marrow of the ribs was examined by Dr. Goodhart, and found to be loaded with cells resembling white blood-corpuscles. The spleen weighed nineteen ounces, was large and softish, and had numerous small patches of hæmorrhage beneath the capsule. The second case, which was under the care of Mr. Stevens, of Stoke Newington, was that of a cheesemonger, thirty-eight years of age, who had good health, till July, 1875, when, as the result of an accident, he became weak and nervous, suffered from languor, loss of appetite, and lumbar pains. When seen in September the abdomen was distended, the liver and spleen enlarged, the blood showed an increase in the white corpuscles, and there was slight albuminuria. Phosphorus was given in the dose of one-fiftieth of a grain. A month later the patient was much feebler, and the sight was impaired; the white corpuscles were in the proportion of one to two red, but the spleen was only slightly enlarged. Hæmorrhage occurred from the kidneys, gums, &c., and, later, symptoms of cerebral lesions, facial paralysis, deviation of eyes to the right, &c., occurred, followed by coma and death. The temperature rose to 108° F. shortly before death. On inspection a thin layer of clot was found in the right hemisphere of the brain, beneath the convolutions in the white substance. The lungs and heart were normal; the liver large and pale. The spleen weighed rather less than twelve ounces, and showed an increase in the trabecular structure. The kidneys were slightly congested; the intestines healthy. In commenting upon the case Dr. Moxon observed: Firstly, that these cases show that leukæmia may occur when the spleen is not large enough to attract attention; in one of the cases it weighed only twelve ounces. Secondly, as to the pathology, he referred to the views of Neumann and Mosler, that leukæmia occasionally had its origin in the marrow of bones. The fact that in one of the cases the medullary tissue of the ribs was found to be stuffed with white blood-corpuscles might seem to be in favour of Neumann's view. But Dr. Moxon believed that they were in reality leucocytes which had escaped from the blood. He referred to the researches of Magnus Huss on the arrangement of the vessels within the cavity of bones, which showed that the arteries do not run with the veins, in order, apparently, to avoid the results of the restraint under which the circulation is carried on. As a consequence of this restraint the swollen veins are apt to become impacted with leucocytes, which subsequently escape. Thirdly, as to the nosology of leukæmia, Dr. Moxon dissented from the division into "lymphatic" and "splenic" leukæmia, believing that the condition of the lymphatic glands in the supposed cases of the former is due to the escape of white cells into the connective tissue spaces. He referred to Klein's searches, which showed that the cells found in these spaces are usually white blood-cells, which have escaped, and subsequently pass again into the blood; and there was no evidence that they were actually *formed* in the glands. It was shown in one of the cases that the leucocytes retained their amœboid movements actively, so that they could still wander. Hence, when, as in leukæmia, there was an obstruction to their return into the blood, they would accumulate in the lymphatic glands. For these reasons he considered "lymphatic leukæmia a myth." Dr. Moxon entered into an analysis of the recorded cases which were supposed to establish the existence of this disease, and showed that none

of them were satisfactory evidence in the matter, and remarked that from the small size of the spleen in the second of his cases, it might, had the glands been enlarged, have been taken to be a case of so-called lymphatic leukæmia. Finally, as to the use of phosphorus in the disease. In these two cases it was useless. Referring to Dr. Wilson Fox's case, he thought that the evidence of the existence of leukæmia in that case was defective.—Dr. BROADBENT remarked that having been directly responsible for the use of phosphorus in leukæmiae, he wished to state that he had no desire to advance phosphorus as a certain cure for the disease. The cases which he had recorded in the *Practitioner* were merely recorded for what they were worth. As to Dr. Moxon's cases, he thought that the first case might be dismissed from consideration as entirely inconclusive, seeing that the predominant symptoms and fatal issue were due to cancer and not leukæmia. But was the phosphorus given from September to November, as well as from July to September? As to the second case, he inquired as to the form in which the phosphorus was given; for if suspended in mucilage he did not consider that it was really tried at all. And when given in ordinary hospital cod-liver oil it speedily becomes oxidised and loses its effect. Nor had he any faith in coated pills, which may be passed unaltered per anum, or may be oxidised. The only form he had faith in was when dissolved in oil and given in capsules. Unless the phosphorus reached the blood as such, he did not believe it was of any use. With reference to Dr. Fox's case, although the spleen remained enlarged, it was not so large as it had been; and the amendment was coincident with the employment of phosphorus, and the first effect seemed to be to cause inflammation of the spleen. Dr. Broadbent related also a case of pernicious anæmia with intermittent hæmaturia, probably of malarial origin, in which the employment of phosphorus had been followed by great pain over the spleen and by fever, the organ becoming softer afterwards. He had tried it also in an early case of Hodgkin's disease with success; but in an advanced case without result.—Sir WM. JENNER thought Dr. Moxon's case of great interest and value, especially as to the enlargement of the glands. He shared Dr. Moxon's doubts as to the existence of leukæmia lymphatica, and agreed with him as to his explanation of the cause of the condition of the bones, which was much more in accordance with facts. The amount of increase of white blood-corpuscles in leukæmia he considered very inconclusive evidence of its severity. As to the use of phosphorus, he had given it in a case of leukæmia, in the form of a pill, containing one-thirtieth of a grain, three times a day. The patient had enlargement of the spleen, there was great excess of white blood-corpuscles, and high temperature. He took the phosphorus for many months without the slightest benefit, and ultimately died of the disease. Of course it might be said that the preparation employed was not an efficacious one, although it was the phosphorus pill of the Pharmacopœia made with lard, and prepared by one of the first druggists in London. But if so, we ought to know what form of administration is the right one, and it would be a disgrace to medical science if we have not evidence soon as to whether we possess a specific or no for so well-marked a disease.—Dr. BROADBENT explained that he did not wish to discredit phosphorus pills made with fat, but only those made with mastic.—Mr. SPENCER WATSON inquired whether the ophthalmoscope had been used in Dr. Moxon's case. He had observed œdema of the retina in two cases of great anæmia.—Dr. MAHOMED remarked that if there were stasis in the capillaries and preponderance of white corpuscles, there was probably capillary obstruction, and consequent high tension in the pulse. In one case the pulse was said to be soft and frequent, but it should be long and hard if this view were correct.—Mr. STEVENS stated that the oleum phosphoratum of the Pharmacopœia was used in the second case; the mixture was made up with mucilage, but it was powerfully phosphorescent, and the patient complained of the horrible smell.—Dr. MOXON, in reply, said that the first patient had the oleum phosphoratum. He did not use the ophthalmoscope; but he believed that a special form of retinitis was stated to occur in these cases. The observations of Dr. Sanderson on the pulse showed that the pulse might feel soft and small to the finger, and yet be highly incompressible, requiring in one case as much as eight ounces to obliterate it. But the absence of high tension might be due to the absence of sufficient propelling power on the part of the heart, partly owing to its capillaries being loaded with white blood-corpuscles.

Dr. DUFFIN read the notes of a case of Menière's Disease. The patient was a master builder, forty-five years of age, who was attacked with sudden and violent vertigo, followed by faintness, vomiting, and purging. The attacks were repeated at intervals. Each attack was preceded by rumbling noises in the right ear, gradually increasing, followed by vertigo, in bouts of a few seconds' duration at first, and then lasting some little time. During the attacks he staggered and fell to the right, and, if lying down, vertigo occurred, and he had the sensations of the bed falling away from him when he lay on the left side, and rising up when on the right. In the fits he was pale, had palpitation, sense of alarm, and fluttering sensation about the heart; each was followed by vomiting, and later by diarrhœa. The fits occurred at intervals of from two to twenty-four hours, and there were subjective noises in both ears at first, which still later were limited to the right ear. The patient described these sounds as being in the ear, not outside it. The heart-sounds were normal. The hearing in the right ear was impaired, though not lost; there was a dim perception of the whole range of notes. With the otoscope the ear appeared normal. Dr. Duffin tried the effect of compression of the right vagus; after half a minute the patient became pale, and passed into a deep faint, lasting two minutes, and on recovery the pulse, which was previously 76 in the minute, became 40, small and firm. There was no change in the pupils. The patient was then lost sight of for fifteen months, during which the fits became less frequent, but there was a tendency to fall to the left, and an aura running from the hypogastrium to the occiput sometimes preceded them. Their severity was also much diminished. Subsequently an attack of the character of petit mal, without vertigo, occurred. As to treatment, valerian was thought to do some good; and belladonna appeared decidedly beneficial. Dr. Duffin discussed at some length the pathology of the several symptoms observed, and the views entertained upon them. Judging from Flourens' experiments, the staggering gait induced by movements was due to irritation of the auditory nerve. In Knapp's paper three cases are related by Hensen, Politzer, and Voltolini respectively, in which fracture of the skull excited such irritation, and the walk was indistinguishable from that of cerebellar disease. Possibly, the particular filaments of the auditory nerve involved were those which have been shown by Lockhart Clarke to be derived from the cerebellum. The views of Goltz and Trousseau were referred to. According to the latter, the impulsion is always to the side of the lesion. Goss and Vulpian relate a case of right vertigo in a cock whose skull had been injured, bearing out this view. With regard to the vomiting, diarrhœa, and pallor, Dr. Duffin thought they were due to implication of the vagus, owing to the proximity of its nucleus to that of the auditory nerve, which was borne out by the symptoms induced by experimental compression of the vagus. After discussing the views as to the part of the auditory nerve implicated in Menière's disease, Dr. Duffin referred to the supposed function of the cochlea in the perception of time intervals. On the question of prognosis, he considered it unfavourable when, on testing the hearing, the power of hearing shrill sound vibrations was absent.—Dr. HUGHLINGS JACKSON said that it was only during the last two years that his attention had been particularly called to the pathology of these cases. He had been consulted by many persons, but especially by medical men, for such symptoms; they often refused to believe that the symptoms had anything to do with the ear, although they had noises in it. He believed that the affection of the cochlea, or of the semicircular canal, was the cause of the noises. The ear might be affected in many different ways; in some cases hæmorrhage into the labyrinth might give rise to such symptoms. The observation made by Dr. Gowers, that in some cases of paralysis of the portio dura there was slight giddiness at the onset, might be explained in some such way. As to the function of the cochlear portion of the auditory nerve, Dr. Jackson believed that the cochlea was instrumental both in the perception of sounds and of intervals, and thought it no more probable that the cochlea should have the power of perception of intervals alone, on account of its structure, than that the retina should have the power of measuring space because it has extension. With reference to the side to which the

patient falls with relation to the side diseased, Dr. Jackson related the case of a gentleman who, two or three years ago, whilst out shooting, was told to use a heavy charge at a particular spot, and, on firing, he heard a great noise, and felt very faint. From that time he was deaf in the right ear, and always in walking tended to the left. Dr. Jackson referred also to the fact that in some cases after injury to the head the patient always reels more or less, and is giddy, and mentioned a case in which a man who is absolutely deaf from such injury is constantly giddy on walking, and reels as if drunk, so that it might be supposed that there was also cerebellar disease. — Mr. DALBY stated that he had been struck by the frequent occurrence of giddiness and tinnitus associated with deafness. He had been led to divide the cases into two classes — one in which deafness followed upon a sudden attack of giddiness, and the other where giddiness was followed by deafness and tinnitus, and the attacks of giddiness were subsequently repeated. He narrated cases of the former class, in one of which the patient fell down in the road in an attack of vertigo, and was found to be deaf; in another, whilst listening to music, the patient had suddenly an attack of giddiness, and lost the power of hearing the high notes first. The cases in which succeeding attacks arise he believed to be of more frequent occurrence, though probably the lesion is in the same situation; in these cases of periodically recurring giddiness it was noteworthy that it was possible to define the exact line of notes which can be heard. He thought that the labyrinth was involved in all cases.—Dr. BUZZARD thought that more than one disorder had been described under the name of Menière's disease. In many cases which he had seen, which in other respects resembled slight examples of the disease they were discussing, there was no deafness, but a sort of tripod of symptoms existed—tinnitus aurium, neuralgia of the fifth or of the occipital nerve, and vertigo. He had also seen several cases like Dr. Duffin's, and some of greater severity. In one the patient, deaf in the left ear and with noises in it, kept her bed for three months unable to turn her head to the left; in another there were almost constant vertigo and vomiting for six weeks. In all, the attacks, which differed materially in length, were paroxysmal, subject to recurrence, and combined with cranial neuralgia. The physiological explanation of the origin of the vertigo was probably correct, but he thought that in very many cases any structural lesion of the semicircular canals must be wanting, for how otherwise could the paroxysmal character of the attacks be explained? He suggested that something like the "nerve storm" of migraine swept the medulla oblongata and set up in the auditory nerve a condition which would be neuralgia in a common sensory nerve, and which showed itself in this peculiar manner. What did we know of the equivalent of neuralgia in nerves of special sensation? In his own cases, Dr. Buzzard added, remedies useful in neuralgia, iron and the local application of belladonna, appeared to have been of service.—Dr. FERRIER said that he had taken much interest in the pathology of these cases, on which great light had been thrown by the researches of Crum Brown and others, who had shown that the direction in which the body is turned is appreciated by means of the semicircular canals. Owing to the direction of the ampullæ and their peculiar inclination to the horizontal and vertical axes, each was irritated by a movement of the body in a particular direction, and the irritation conveyed by the endolymph to the expansion of the nerve. This explained the mechanism of equilibration. Dr. Ferrier referred to experiments of his own, not yet published, on the centres of co-ordination corresponding to the semicircular canals. There could be no doubt that the body was always thrown to the side *opposite* to the seat of irritation, and backwards or forwards according to the ampulla irritated. Thus, if the *left posterior* canal were irritated, the animal was thrown to the *right* and *forwards*, owing to the disturbance of equilibrium. Probably the symptoms were usually due to irritation, which might come on in paroxysms. In Dr. Duffin's case, the fact that the patient fell towards the right at first, although the right ear was affected, was explained by the existence at the time of noises in the left ear; subsequently the patient always fell to the left—the right ear alone being deaf. So Dr. Jackson's case followed the same rule, of falling to the side opposite to the injury. As to the condition of the organ of hearing, Dr. Ferrier pointed out that, when the patient suffers from vertigo, he may be able to hear aerial musical notes, though insensible, on the side of the affected ear, to skull vibrations from a tuning-fork. This shows that whilst the cochlea hears aerial sounds, the semicircular canals are sensible to the vibrations from the skull.—Dr. BROADBENT inquired whether the patient might not think he was falling in one direction, and, in trying to resist the impulse, fall to the other. This appeared to be the case in Dr. Duffin's patient, for when lying on his left side the bed seemed to sink under him, but when on the right it seemed to rise up beneath him.—Dr. DUFFIN could not say how far the movement might be due to the resistance to inert impulsion.

Reviews and Notices of Books.

Elements of Human Physiology. By D. L. HERMANN. Translated from the Fifth Edition by ARTHUR GAMGEE, M.D., F.R.S. London: Smith, Elder, and Co. 1875.

WE are glad to welcome the appearance of Professor Gamgee's translation of Hermann's Physiology. It constitutes an addition to English scientific literature of no small value. The work attained the first position among German text-books soon after its appearance in 1863—a position well deserved and well maintained. In ten years it has passed through four editions, and the fifth, which has lately appeared, is that which has been translated into English.

The work is one in every way worthy of its reputation. Comprehensive in its scope, it includes the bye-paths as well as the high-ways of the science. Concise in style, it embraces, in a volume of moderate size, very full detail of fact and theory. It represents the latest point reached in physiological thought, not only in substance, but in method. Recent facts are not engrafted upon old formulæ, but the principles and modes of thought of advanced physiology are dominant throughout. These are admirable characteristics; nevertheless, the degree to which they are carried will probably narrow the range of usefulness of the book. It is a compressed comprehensive account of the "elements" of the science, not a handbook for students who are approaching for the first time its mysteries. It constitutes an admirable guide for the student of pure physiology, but is hardly calculated for the average medical student. Its pages are loaded with details, many of them abstruse and most of them compressed. Those points in physiology of more special medical importance are, in many cases, subordinated to others which modern research has raised into prominence. The causes of the sounds of the heart, for instance, are discussed, or rather, we should say, are dismissed, in ten lines, while the formation of the image in the eye is elaborately described in fourteen pages of mathematical formulæ. Many of the statements are too concise to be easily comprehensible, as where we are informed that "according to Soxlet the normal reaction of milk is amphichromatic." The value of the work to the advanced student is lessened, too, by the absence of references. The names of the authorities for the several statements are given (within brackets) in the text, but no reference is ever given to the place at which the facts are stated. The method has, no doubt, its advantages, but we think that in a text-book of such a character and scope the space is well bestowed which is occupied by references that enable the student to examine in greater detail the facts on which the statements in the text are based.

Detailed criticism of such a book is impracticable within the limits of a short review, but we may indicate its general plan and proportions. The work is divided into four parts. Of these, the first treats of the "exchanges of matter in the organism," and opens with an account of the chief consti-

tuents of the body, containing diagrams of their probable composition. This is followed by a description of the blood and its circulation, including the physiology of the heart. The innervation of the heart is very well described. The next chapter, on the sources of loss to the blood, embraces the problems of secretion in general, and of the individual secretions, including the urine, the physiology of which receives detailed consideration. The "reception of material into the blood" in the next chapter includes a description of the chemistry and mechanics of digestion and of absorption. Here we find no account of the question of absorption from the large intestine. The "gaseous interchanges of the blood," involve a description of respiration, followed by a brief account of asphyxia, and of the consequences of the inhalation of various gases. The next subject, "on the exchanges of the matter of the blood," includes the changes having their seat in the blood-corpuscles, and the exchanges of the chemical constituents; and in an appendix the questions of the formation of glycogen and sugar in the tissues. The only point of fresh interest in the account relates to the statements of Ploss and Tiegel relative to the origin of the sugar-forming ferment. They believe that it does not exist ready formed in the blood, but is produced from red corpuscles at the moment of their destruction. It is of interest in this connexion, therefore, to note that in the liver, in which the ferment is mostly needed, red corpuscles are chiefly destroyed. The exchanges of the matter of the body as a whole form the subject of the next chapter, including that of the total income and expenditure, introducing the subject of food, a question which is very briefly treated.

The activities or energies of the body constitute the subject of the second part. The relation of the force evolved in the body to food is first discussed, and then the manifestation of that force in heat or motion. An excellent description is given of the various phenomena of muscular contraction. The problem of muscular activity is one to which the author has devoted much thought, and he supposes both rigor and contraction to be due to the coagulation of a complex nitrogenous substance which he calls inogene, but which has not yet been isolated. In an appendix to this chapter the uses of muscles are described, the mechanism of the skeleton, the conditions of equilibrium and of active locomotion of the whole body, and the mechanism of voice and speech.

In the third part is described at great length the "liberating apparatus"—i.e., the nervous system. This part occupies more than a third of the work. The general and special physiology of the nerves are first described, their irritability and the conditions influencing it, and their electrical phenomena. An outline is then given of the physiology of the special cranial and spinal nerves. Much space is devoted to the physiology of the "peripheral end-organs," which includes that of the special senses. The explanation of the physiology of vision is especially full and excellent, extending to 70 pages, and containing perhaps the best account of the mathematical optics of vision that has yet appeared in a work on general physiology. The account of the physiology of every part of the nervous system is exceedingly good. We are surprised, however, to see that the experiments on local stimulation of the surface of the brain receive the very inadequate explanation that the results are due to the conduction of the current to a deeper centre. The impossibility of explaining thus the strict limitation of the special areas has led, we believe, all those who have investigated the subject for themselves to reject it as insufficient. A rather brief account of generation and development terminates the work. The development of special organs lying on the borderland between physiology and histology is relegated to the latter.

The translation of the book is very well executed, and the letterpress has evidently been carefully revised. There are a few literal errors. The translation of a style so compressed as that of Professor Hermann was by no means easy, especially in the accurate rendering of the generic terms which he employs. The chief functions of the nervous system, for instance, are designated by the word "auslosung." This Dr. Gamgee has translated into "liberating"—a sufficiently exact, though not literal rendering. The word "discharge" was, we are told in the preface, suggested to him by a high authority as a preferable rendering. He has wisely adhered to the former expression. "Discharge," in modern parlance, may signify the condition of "going off" as well as the action of "letting off," and a similar double meaning has found its way into pathological nomenclature. It is only in the latter of the two significations that it can convey the meaning of the word "auslosung."

A fuller index would increase the convenience of the work. The present index is not very complete, as may be inferred from the fact that words of such frequent occurrence in the book as "sphincter," "placenta," "choroid," and "retina," are not to be found in it.

Saint Thomas's Hospital Reports. New Series. Vol. V. Edited by Dr. Bristowe, Dr. John Harley, and Mr. Wagstaffe. London: J. and A. Churchill. 1875.

This volume is fully up to the average of the class of annuals to which it belongs. Although it does not contain many papers of striking novelty, yet there is to be found within its pages much that is of real practical value. The first article in the book is by Dr. Peacock, and is a most elaborate analysis of 100 cases of pneumonia, in which every factor in the etiology, symptomatology, and sequelæ of the disease is brought under the test of statistics. Although perhaps less attractive than many a clinical sketch, this weighty contribution of Dr. Peacock's is a solid addition to medical science. There are not many papers on medical subjects in the volume, and we turn over many pages before we come to perhaps the most interesting of them—the paper on Various Forms of Erythema and their relations with Lupus, Pemphigus, and other Affections, by Dr. Bristowe. It contains an extended description of erythema multiforme, and its alliance with herpes and pemphigus and probable neurotic origin are pointed out. Several cases are appended in illustration of these views; among them a most striking one of caries of the upper dorsal vertebræ, in which a unilateral eruption of pemphigus occurred, beginning as an "erythema circinatum." The case in question possessed other features of interest, the vertebral disease leading to ulceration of the lung. In surgical contributions the volume is particularly rich. Mr. Le Gros Clark here records the first case he has met with of partial dislocation of the head of the humerus backwards, produced in the hunting field. Deformity was very slight, and reduction easily effected. Mr. MacCormac relates a case of movable body in the knee-joint, in which the subcutaneous operation was performed with success, the "loose cartilage" being extruded into the periarticular tissues, where its gradual absorption took place under observation. Mr. S. Osborn writes on the Corpus Morgagni, with reference to certain diseases of the testicle, as encysted hydrocele, fibrous and cartilaginous growths, and dermoid cysts. Mr. Mason enters fully into the treatment of burns and scalds, and the deformities they occasion, including in his paper the results of his inquiries into the methods employed at a large number of hospitals, and describing in detail several cases of plastic operation. Mr. Croft speaks highly of the efficacy of quinine administered internally in cases of ser-

piginous and phagedænic ulceration; while Mr. Arnott contributes a readable and interesting little paper entitled "Jottings from the Surgical Out-patient Room." Mr. Sydney Jones describes in full detail three rare surgical cases—viz., a case of lymphangeioma, with general enlargement of limb and elephantiasis of the bone, since published in the Pathological Transactions; a case of elongation of the limb in connexion with disease of the knee-joint, and a case of successful excision of the astragalus after dislocation of eight months' duration. Among other papers may be noted Mr. Wagstaffe's research upon the mechanical arrangement of the cancellous tissue of bones; Mr. Rainey's account of continued currents in fluids; and Dr. Ord's suggestive paper on the natural history of uric acid and urates, in which he shows the influence upon the form of crystals obtained by the nature of the medium containing the salts. Dr. Siddall gives his surgical experiences in the military hospitals of Japan. Dr. John Harley discusses at length the action and use of aconitia. His conclusions may be thus summarised: Aconitia acts upon a portion of the cranio-spinal axis in the same manner as strychnia affects the whole; its centre of action being the medulla about the roots of the vagus, hypoglossal and spinal accessory nerves, from which point its influence radiates as far as the centres of the third spinal nerves, its action diminishing in intensity, and beyond these limits leading to paralysis; it affects the sensory as well as motor functions in about an equal degree and for a like extent, while the sensory organs are apparently unaffected; it has no direct influence on the brain nor on the sympathetic system; death is brought about by asphyxia. Dr. Harley does not believe in the commonly accepted doctrine of inhibition, especially that of the vagus on the heart, and thinks that the cardiac phenomena produced by the drug are secondary to the embarrassed respiration.

This notice would be incomplete indeed if attention were not drawn to the very exhaustive reports furnished by the medical and surgical registrars for the year 1873—viz., Drs. Greenfield and Creighton. The medical report stands out *par excellence* above all others that we have seen from this or any other hospital. Admirable in arrangement and extensive in character, this report bears evidence of a large amount of careful and laborious work. All the more important diseases are analysed in special abstracts, while of the special tables there are no fewer than seven—viz., enteric fever, rheumatic fever, chorea, mitral valvular disease, empyema, and fatal cases of Bright's disease. We could wish that these reports might be more widely circulated, and would venture to suggest the advisability of their being issued separately as well as together with the volume.

Year Book of Pharmacy; with the Transactions of the British Pharmaceutical Conference. London: J. and A. Churchill.

IN this volume there is collected a vast amount of information which, scattered among journals, British and foreign, would otherwise be lost to the English reader. It affords gratifying evidence also of the great activity now prevalent in the departments of pharmaceutical chemistry and of therapeutics. The summaries and abstracts of papers are prefaced by a sketch of the chief additions to pharmacy made during the past year. Salicylic acid, bromide of camphor, jaborandi, and many other substances less known to the general reader, are evidences of this activity. The volume contains also the Transactions of the British Pharmaceutical Conference, held at Bristol in August, 1875, with the introductory address delivered on that occasion by the President, Mr. T. B. Groves. The discussions, as well as the papers giving rise to them, are reported, and among the latter may be specially indicated Dr. Tilden's contribution upon the Crystalline Constituents of Barbadoes and Socotrine Aloes, and Mr. Gerrard's Chemical Research upon Jaborandi, to which is appended a brief report on the physiological action of the alkaloid (pilocarpin) by Mr. W. Murrell. One of the papers is of a distinctly controversial nature, and led to a prolonged and animated discussion. It referred to the method of estimating the fat of milk proposed by Messrs. Horsley and Stoddart, the author seeking to prove the inaccuracy of the method, which, however, was warmly upheld by some of the speakers.

THE EFFECT OF PROLONGED MUSCULAR EXERCISE ON THE SYSTEM.

BY F. W. PAVY, M.D., F.R.S.

AT 9.45 P.M. on Feb. 15th Mr. Weston started on his second walk at the Agricultural Hall, purposing this time to accomplish 180 miles in forty-eight consecutive hours. His pulse whilst quietly at rest at 3.45 in the afternoon had been 72, and the temperature of his mouth 99° F. His weight at starting in his walking costume was 137¾ lb. The track at commencing, on account of the admixture of too much gravel with the loam, allowed his feet to slip, and, not only retarded his progress, but somewhat strained his legs. He, however, got over a distance of 100 miles in the first twenty-four hours, and accomplished the remainder and about a third of a mile within the allotted time. He continued walking throughout the night of the 15th. At twenty minutes to 12 on the night of the 16th he retired to a private room belonging to the hall, where a bed had been prepared for him. At this time his pulse was 84, and the temperature, taken in the mouth, 98·8°. He slept soundly, and resumed walking at 3.27 A.M. At the completion of the walk he weighed (in the same clothes as at the commencement) 133 lb. He had thus lost 4¾ lb. during the forty-eight hours. No evidence of distress was upon this occasion perceptible. He appeared active and cheerful, and, ascending into the judges' stand, made an appropriately expressed speech in which his tongue moved as nimbly as his legs had previously done. On reaching home his feet, in accordance with the usual practice, were bathed for about seven minutes in a strong solution of salt and water with the chill off. At this time—viz., an hour and a quarter after completing his task—his pulse was 94, and the temperature of his mouth 97·6°. Resting for a short time upon the couch, he then went to bed without manifesting any sign of disturbance, and was about as usual the next morning.

Subjoined is an account of the food taken, according to the information supplied by the attendant, and of the examination of the urine.

The first twenty-four hours of Weston's forty-eight hours' walk. Distance walked 100 *miles.*—Amount of urine passed 2186·6 c.c. (77 oz.); specific gravity 1027·98. Free acidity, reckoned as oxalic acid, 2·3 grammes in 1000 c.c. (1·007 grains in 1 oz.). Clear dark-amber colour. Microscopic characters: A few uric-acid crystals. Composition in 1000 parts:—

Water			940·39
Solid residue (dried at 240° F.) ...			59·61
Incinerated residue ...		14·72	
Organic constituents—			
Urea	33·65		
Uric acid	·53		
Other organic matters ...	10·71	——	44·89
Mineral constituents—			
Chlorine	1·00		
Sulphuric acid	2·56		
Phosphoric acid	3·79		
Soda	1·90		
Potash	5·05		
Lime	·07		
Magnesia...	·08		
Loss	·27	——	14·72
			59·61

Total quantity of solids excreted during the twenty-four hours:—

Urea	75·656	grammes	(1167·52 grains)
Uric acid	1·202	„	(18·59 „)
Other organic matters	24·424	„	(376·91 „)
Chlorine	2·261	„	(34·89 „)
Sulphuric acid	5·882	„	(90·77 „)
Phosphoric acid	8·527	„	(131·58 „)
Soda	4·129	„	(63·72 „)
Potash	11·348	„	(175·67 „)
Lime	·153	„	(2·36 „)
Magnesia	·196	„	(3·024 „)

Food consumed—Feb. 16th: 1 A.M., tea about 3 fluid oz.; 1.30 A.M., beef-tea about 3 fluid oz.; 2.30 A.M., yelk of egg; 3 A.M., yelk of egg; 3.45 A.M., tea about 3 oz.; 4.15 A.M., yelk of egg; 5.15 A.M., beef-tea about 3 oz.; 5.45 A.M., coffee about 3 oz.; 6.15 A.M., beef-tea about 2 oz.; 6.30 A.M., yelk of egg; 6.45 A.M., coffee about 2 oz.; 8 A.M., the same; 9 A.M., about 1 tablespoonful of blanc-mange, made from sea-moss farina; 9.25 A.M., beef-tea about 3 oz.; 10.30 A.M., coffee about 3 oz.; 11 A.M., beef-tea about 2 oz.; 11.45 A.M., oatmeal gruel a quarter of a pint; 12.20 P.M., beef-tea about 3 oz.; 12.30 P.M., sea-moss farina blanc-mange about 1 tablespoonful; 1 P.M., beef-tea about 2 oz.; 1.30 P.M., coffee about 3 oz.; 2.10 P.M., oatmeal gruel 1 teacupful; 3 P.M., jelly about 3 teaspoonfuls; 3.50 P.M., prune-tea (French plums infused in warm water) about 2 oz.; 4 P.M., oatmeal gruel, 1 teacupful; 4.45 P.M., jelly about 3 teaspoonfuls; 5 P.M., tea about 3 oz.; 5.30 P.M., beef-tea about 3 oz.; 6 P.M., the same; 7.10 P.M., oatmeal gruel, 1 teacupful; 8 P.M., coffee about 3 oz.; 9.10 P.M., beef-tea about 3 oz. Besides the above, one orange and one-third of a pound of grapes were consumed during the twenty-four hours. The beef-tea was made with Liebig's extract, using half a teaspoonful to one teacupful of water. The tea and coffee were taken, except in the case of cold tea, with a little milk and sugar.

The second twenty-four hours of Weston's forty-eight hours' walk. Distance walked 80¼ *miles.*—Amount of urine passed, 1391·4 c.c. (49 oz.); specific gravity, 1032·80; free acidity, reckoned as oxalic acid, 2·25 grammes in 1000 c.c. (·986 grains in 1 oz.); turbid from copious lithate deposit. Microscopic characters: Amorphous lithate of soda, with a few uric-acid crystals. Composition in 1000 parts:—

Water			931·38
Solid residue (dried at 240° F.)			68·62
Incinerated residue		14·11	
Organic constituents—			
Urea	44·00		
Uric acid	·84		
Other organic matters	9·67	54·51	
Mineral constituents—			
Chlorine	·19		
Sulphuric acid	2·95		
Phosphoric acid	3·38		
Soda	2·67		
Potash	4·59		
Lime	·31		
Magnesia	·23		
		14·11	
Less excess	·21		
		68·62	

Total quantity of solids excreted during the twenty-four hours:—

Urea	63·239	grammes	(975·90 grains)
Uric acid	1·210	„	(18·67 „)
Other organic matters	13·886	„	(213·18 „)
Chlorine	·278	„	(4·29 „)
Sulphuric acid	4·243	„	(65·49 „)
Phosphoric acid	4·869	„	(75·16 „)
Soda	3·940	„	(60·25 „)
Potash	6·595	„	(101·85 „)
Lime	·445	„	(6·86 „)
Magnesia	·334	„	(5·15 „)

Food consumed—Feb. 16th: 9.50 P.M., Brand's essence of beef, 1 teaspoonful; 10 P.M., cold tea with ice and lemon, 1 teacupful.—Feb. 17th: 3.45 A.M., cold roast beef, about 2 oz., bread about 3 oz., butter and tea; 4.15 A.M., beef-tea about 3 oz; 4.30 A.M., coffee 1 teacupful; 6 A.M., coffee about 4 oz., biscuit about 1 oz.; 6.30 A.M., 1 teacupful of cold tea with ice and lemon; 7 A.M., 1 teaspoonful of Brand's essence of beef; 8.15 A.M., coffee with cold roast beef, 3 oz., bread, 2 oz., and butter. (Information during the period here intervening wanting.) 1.40 P.M., beef-tea about 3 oz.; 1.50 P.M., oatmeal gruel, one teacupful; 2.45 P.M., jelly, 3 teaspoonfuls; 3.20 P.M., essence of beef, 1 teaspoonful; 3.45 P.M., beef-tea about 4 oz.; 4.10 P.M., cold tea with ice and lemon; 5 P.M., the same; 5.30 P.M., beef-tea about 4 oz.; 5.45 P.M., cold tea; 6.30 P.M., yelk of egg; 7.30 P.M., yelk of egg; 8 P.M., cold tea; 8.30 P.M., yelk of egg; 9 P.M., yelk of egg; 9.15 P.M., cold tea; 9.20 P.M., prune tea.

Urine passed by Weston one hour after completion of forty-eight hours' walk.—Amount, 113·6 c.c. (4 oz.); specific gravity, 1030·52; free acidity, reckoned as oxalic acid, 2·25 grammes in 1000 c.c. (·986 grain in 1 oz.); dark in colour and clear. A more than usual amount of mucous settlement, which displayed on microscopic examination epithelial cells, without any crystalline deposit. Composition in 1000 parts:—

Water			931·50
Solid residue (dried at 240° F.)			68·50
Incinerated residue		13·78	
Urea	44·11		
Chlorine	2·28		
Sulphuric acid	3·50		
Phosphoric acid	3·40		

WESTON'S 275 MILES WALK IN 75 CONSECUTIVE HOURS.

This was commenced at 8.5 P.M., Feb. 22nd, and completed, with five minutes to spare, at 11 P.M. on the 25th. The first 90 and the last 60 miles were walked without any stoppage for rest. The second night Weston slept from ten minutes past twelve till half-past three, and the third night from one till three. Hurried to get on the track at the specified time, a failure occurred in obtaining the weight. On his arrival home after the completion of the walk he presented no evidence whatever of distress. His pulse at this time was 96 and the temperature of his mouth 98·9°. His feet were quite unaffected, with the exception of an insignificant blister on the right heel. On the following day he got up and went about without giving the slightest indication of appearing to be conscious that any particular bodily task had been previously performed. Throughout the walk and afterwards there was no abnormal condition of the urine as in his first performance.

Care was taken to secure an accurate account of the food consumed being obtained. The report is founded upon actual weights and measures. I entrusted this department to Mr. Percy Reynolds, one of our advanced students at Guy's Hospital, and my thanks are due to him for the attention he bestowed upon the task undertaken.

The twenty-four hours preceding Weston's seventy-five hours' walk.—Amount of urine passed, 1221 c.c. (45 oz.); specific gravity, 1028·4; free acidity, reckoned as oxalic acid, 1·89 grammes in 1000 c.c. (·828 grain in 1 oz.); clear and of a pale-straw colour. Microscopic characters: Only a few epithelial particles visible. Composition in 1000 parts:—

Water			944·80
Solid residue (dried at 240° F.)			55·20
Incinerated residue		17·18	
Organic constituents—			
Urea	33·11		
Uric acid	·66		
Other organic matters	4·25	38·02	
Mineral constituents—			
Chlorine	3·74		
Sulphuric acid	2·98		
Phosphoric acid	2·35		
Soda	4·32		
Potash	3·21		
Lime	·14		
Magnesia	·09		
Loss	·35	17·18	
		55·20	

Total quantity of solids excreted during the twenty-four hours:—

Urea	41·516 grammes	(640 67 grains)
Uric acid	·830 „	(12 80 „)
Other organic matters	5·190 „	(80·09 „)
Chlorine	4·634 „	(7 71 „)
Sulphuric acid	3·736 „	(57 06 „)
Phosphoric acid	2·955 „	(45·60 „)
Soda	5·420 „	(83 63 „)
Potash	4 030 „	(62·18 „)
Lime	·175 „	(2·62 „)
Magnesia	·113 „	(1·74 „)

Food consumed: 1 lb. 5 oz. meat (cold roast beef, cold beef-steak, and lean of mutton-chop); 1 lb. 2 oz. bread spread with butter; 6¼ oz. bread made into dry toast; 6 milk biscuits (Peek, Frean, and Co.); 2 poached eggs; 2 teaspoonfuls orange marmalade; 1 tablespoonful mashed potatoes; 3 dessertspoonfuls rice pudding; 6 cups of tea with milk and sugar; 2 breakfast-cups of coffee with milk and sugar.

The first twenty-four hours of Weston's seventy-five hours' walk. Distance walked 104 *miles.*—Amount of urine passed, 2044·5 c.c. (72 oz.); specific gravity, 1029·26. Free acidity, reckoned as oxalic acid, 3·465 grammes in 1000 c.c. (1·51 grains in 1 oz.). Amber colour, and clear. Microscopic characters: A few crystals of uric acid. Composition in 1000 parts:—

Water		944·18
Solid residue (dried at 240° F.)		55·82
Incinerated residue	13 79	
Organic constituents—		
Urea	32·86	
Uric acid	·27	
Other organic matters	8 90	42 03
Mineral constituents—		
Chlorine	1·85	
Sulphuric acid	2·80	
Phosphoric acid	3·98	
Soda	2·33	
Potash	3·02	
Lime	·03	
Magnesia	·14	
		13·79
Less excess	·37	
		55·82

Total amount of solids excreted during the twenty-four hours:—

Urea	68·507 grammes	(1057·20 grains)
Uric acid	·568 „	8·76 „
Other organic matters	18·726 „	(288·93 „)
Chlorine	3·844 „	(59·33 „)
Sulphuric acid	5 848 „	(90 25 „)
Phosphoric acid	8·302 „	(128·12 „)
Soda	4·902 „	(75·60 „)
Potash	6 354 „	(97 98 „)
Lime	·063 „	(·97 „)
Magnesia	·294 „	(4·54 „)

Food consumed: 4 oz. meat (lean from 1 chop); 2¼ oz. bread made into dry toast; 1½ oz. Liebig's extract of meat; 1 6 oz. tin (by measure) of Brand's essence of beef; 2 oz. oatmeal made into gruel; 2 pints 14½ oz. jelly; 3¾ oz. mixed tea; 2½ oz. coffee; 8½ oz. sugar; 1 lemon; 10 yelks of eggs; 4 oz. grapes; 4 oz. prunes, for making prune-tea; 18 oz. (by measure) sea-moss farina blancmange; 5 milk biscuits (Peek, Frean, and Co.); 2½ pints of milk.

The second twenty-four hours of Weston's seventy-five hours' walk. Distance walked 76 *miles.*—Amount of urine passed, 1703·8 c.c. (60 oz.); specific gravity, 1029·46; free acidity, reckoned as oxalic acid, 2·52 grammes in 1000 c.c. (1·10 grains in 1 oz.); turbid from lithate deposit. Microscopic characters: Amorphous lithate of soda. Composition in 1000 parts:—

Water		933·46
Solid residue (dried at 240° F.)		66·54
Incinerated residue	9·26	
Organic constituents—		
Urea	44·13	
Uric acid	·62	
Other organic matters	12·53	57·28
Mineral constituents—		
Chlorine	·38	
Sulphuric acid	3·47	
Phosphoric acid	2·04	
Soda	1·50	
Potash	1·73	
Lime	·32	
Magnesia	·06	
		9·26
Less excess	·24	
		66·54

Total quantity of solids excreted in the twenty-four hours—

Urea	77·523 grammes	(1196·33 grains)
Uric acid	1·090 „	16 82 „
Other organic matters	21 965 „	338·84 „
Chlorine	·664 „	10·246 „
Sulphuric acid	6·099 „	94·135 „
Phosphoric acid	3·579 „	55·21 „
Soda	2 629 „	40·56 „
Potash	3·033 „	46·65 „
Lime	·561 „	8·64 „
Magnesia	·105 „	1·61 „

Food consumed: 1 lb. 9 oz. meat (lean from four mutton-chops and two beef-steaks); 12 oz. bread spread with butter; 8½ oz. bread made into dry toast; 2 yelks of eggs; 2 poached eggs; 5 oz. potatoes; ½ oz. Liebig's extract of meat; 1 6 oz. tin (by measure) of Brand's essence of beef; 2 oz. oatmeal made into gruel; 2 pts. 3 oz. jelly; 2¾ oz. mixed tea; 2 oz. coffee; 10 oz. sugar; 3 oranges; 2 lemons; 1 lb. grapes; 1 oz. prunes, eaten as such; 2¾ pts. milk; 3 Osborn biscuits (Huntley and Palmer's).

The third twenty-four hours of Weston's seventy-five hours' walk. Distance walked 83 *miles.*—Amount of urine passed, 1590·2 (56 oz.); specific gravity, 1031·04. Free acidity, reckoned as oxalic acid, 2·83 grammes in 1000 c.c. (1·24 grains in 1 oz.). Turbid from copious deposit of lithates. Microscopic characters: Amorphous lithate of soda. Composition in 1000 parts:—

Water		940·55
Solid residue (dried at 240° F.)		59·45
Incinerated residue	12·49	
Organic constituents—		
Urea	44 52	
Uric acid	·77	
Other organic matters	1·67	46·96
Mineral constituents—		
Chlorine	·29	
Sulphuric acid	3·19	
Phosphoric acid	2·41	
Soda	2·47	
Potash	3·53	
Lime	·27	
Magnesia	·13	
Loss	·20	12·49
		59·45

Total quantity of solids excreted during the twenty-four hours:—

Urea	73·140 grammes	(1128·55 grains)
Uric acid	1·272 „	(19·59 „)
Other organic matters	2·702 „	(41·69 „)
Chlorine	·477 „	(7·36 „)
Sulphuric acid	6·247 „	(96·43 „)
Phosphoric acid	3·975 „	(61·25 „)
Soda	4·070 „	(62·80 „)
Potash	5·883 „	(90·92 „)
Lime	·429 „	(6·63 „)
Magnesia	·207 „	(3·18 „)

Food consumed: 9 oz. meat (lean of mutton-chop and cold roast beef); 9½ oz. bread made into dry toast; 14½ oz. oatmeal, made with milk and water into gruel; ½ pint jelly;

¼ oz. mixed tea; 2½ oz. coffee; 8½ oz. sugar; 2 oranges; 2 lemons; 4 yelks of eggs; 2 lb. grapes; 1½ oz. prunes, eaten as such; 3 pints milk; 29 Osborn biscuits (Huntley and Palmer's); 2 pints beef-tea (made from fresh meat).

Twenty-four hours' period, commencing ten hours subsequent to the completion of Weston's seventy-five hours' walk (9 A.M. Feb. 26th to 9 A.M. Feb. 27th).—Amount of urine passed, 851·9 c.c. (30 oz.); specific gravity, 1031·36; free acidity, reckoned as oxalic acid, 1·19 grammes in 1000 c.c. (·52 grain in 1 oz.); dark in colour; copious deposit of lithates. Microscopic characters: Amorphous lithate of soda, with a few crystals of oxalate of lime. Composition in 1000 parts:—

Water		922·00
Solid residue (dried at 240° F.)		78·00
Incinerated residue ...	15·61	
Organic constituents—		
Urea	43·88	
Uric acid	1·31	
Other organic matters ...	18·20	63·39
Mineral constituents—		
Chlorine	4·31	
Sulphuric acid	1·87	
Phosphoric acid ...	1·76	
Soda	4·57	
Potash	1·74	
Lime	·65	
Magnesia	·35	
Loss	·36	15·61
		78·00

Total quantity of solids excreted during the twenty-four hours:—

Urea	31·950 grammes	(492·99 grains)
Uric acid	·954 „	(14·66 „)
Other organic matters	15·99 „	(246·75 „)
Chlorine	3·152 „	(48·60 „)
Sulphuric acid ...	1·363 „	(20·98 „)
Phosphoric acid ...	1·278 „	(17·75 „)
Soda	3·323 „	(51·23 „)
Potash	1·269 „	(19·44 „)
Lime	·477 „	(7·40 „)
Magnesia	·256 „	(3·86 „)

Food consumed: Feb. 26th, 10.30 A.M. (no food having been previously taken since completion of walk), 8 tablespoonfuls of baked haricot beans; 4 oz. salt pork; 1 rissole of salted cod fish and potato; 3 biscuits; 3 buckwheat cakes; 2 breakfast-cupfuls of coffee, with milk and sugar. 2.30 P.M., 1 plate of mock turtle soup; boiled mutton and caper sauce (moderate quantity); potatoes; cauliflower; bread, 2 oz.; cup of cold coffee with ice and sugar. 8 P.M., 7 tablespoonfuls of baked haricot beans; 2 oz. salted pork; 2 rissoles of salted cod-fish and potato; 3 oz. steak; asparagus on toasted bread (about 6 oz.); 2 preserved peaches; 3 oz. bread spread with butter; 2 cups of coffee, with milk and sugar. 10.30 P.M., cup of coffee, with milk and sugar.—Feb. 27th, 1 A.M., 1 orange; ½ lb. grapes; ½ pint of jelly.

PROFESSOR SANDERSON ON THE PROCESS OF INFLAMMATION.

LECTURE IV.

THIS, the concluding lecture of the course, was delivered on Dec. 22nd before a large and appreciative audience. On the 24th Dr. Sanderson gave a demonstration of the phenomena referred to in this lecture.

The purpose of his lecture was to afford as definite an answer as can, in the present state of our knowledge, be given to the question in how far the non-vascular structures of an inflamed tissue take part in the process of inflammation.

To a certain but very limited extent a conclusion can be arrived at on the subject without reference to the results of minute anatomical investigation, for in certain inflammations of rapid progress (such, for instance, as that described in the last lecture as produced in the ear of the rabbit by subjecting it for a short time to a temperature of 120° F.) purulent infiltration takes place in so short a period and in such abundance that any process of germination is manifestly inadequate for the production of the result.

It would not, however, be possible to rest satisfied with such a mode of dealing with the question. The real answer can only be got at by a laborious anatomical investigation of inflamed tissue in all stages of inflammatory change. The moment that this is attempted, the complexity of the subject becomes apparent; for, as might be anticipated, the behaviour of different tissues, when acted on by *noxæ*, is as various as their physiological endowments, so that no general statement on any point can be made until its applicability to each tissue has been separately tested.

This being so, it must obviously be impossible, within such narrow limits as those of a lecture, to give more than a very imperfect account of the textural changes which result from injuries. The utmost that can be attempted is to confine our inquiries to that tissue of which some of the forms present themselves in every organ of the body, and which is the favourite seat of acute inflammation.

Of all the forms of connective tissue, that which constitutes the cornea has been the most studied, both as regards its normal anatomical characters and the changes it undergoes when inflamed. It may, indeed, well serve as an example of connective tissue in general, for, with the obvious exception that it is not vascular, it exhibits in a typical form all those characteristics by which connective tissue is distinguished. Its intercommunicating channels have the same morphological significance as those of the general network of so-called lymphatic canaliculi, of which the limits of distribution are co-extensive with those of the organism itself; while its corpuscles are the counterparts of those long-known "connective-tissue corpuscles"—branched and nucleated placoids of protoplasm—which at intervals lie concealed in the canalicular spaces, and derive their flattened and ramified forms from those of the cavities they occupy.

On account of the uncertainty which still exists with reference to certain important anatomical questions, the subject of traumatic keratitis is still beset with considerable difficulties. Hence, the only way in which it can be shortly and at the same time usefully dealt with is by confining the attention to a single form—namely, that which is produced by a limited central injury.

In the batrachian eye the process may be most advantageously studied by touching the very centre of the corneal surface carefully with an extremely fine point of nitrate of silver. If the cornea so acted upon is prepared thirty-six hours afterwards with the aid of chloride of gold, it exhibits to the naked eye a central eschar surrounded by an area which can be distinguished from the rest by its somewhat brighter colour; and if the tissue of this area is examined microscopically, it is found that within it the cornea-corpuscles present an altered and, as it were, shrivelled appearance, so that the network of protoplasm, with the appearance of which everyone is familiar in the normal cornea, has lost its continuity and integrity, while in the neighbourhood of their nuclei many of the corpuscles exhibit little holes, as if containing clear liquid, excavated in the protoplasm. From the presence of these holes—commonly spoken of as vacuoles—the zone may be called the zone of vacuolation. The appearances seem plainly to indicate that the caustic has, in the immediate neighbourhood of the eschar, injured or disintegrated the tissue by its direct action.

What follows may be seen in preparations made some twenty-four or thirty-six hours later. By this time exudation has begun from the border of the cornea towards the injured part. *By infection* the vessels of the limbus have become congested, so that the conditions favourable for the sweating out of liquor sanguinis and the escape of leucocytes are present. Soon protoplasmic masses, differing entirely from those proper to the corneal tissue, present themselves among the normal elements, which, from the form they assume and their distribution, appear to be making their way centripetally. It is at this point that the question which it chiefly concerns us to answer presents

itself. Ten years ago, if we had examined a cornea at this stage, we should have said without hesitation, Here is an instance of abundant "proliferation" or germination of tissue; the cornea-corpuscles have given birth *in situ* to a progeny much more numerous than themselves. At that time the modes of preparation in use were very imperfect and unsatisfactory, so that a great deal that is now clear was necessarily left to conjecture. Appearances were seen under the microscope which suggested endogenous multiplication of cells, and there was no reason for doubting that these appearances corresponded to the reality. Now we are in a somewhat different position. Cohnheim's discovery of the chloride of gold method (to which others nearly as valuable have since been added) has placed both supporters and opponents of germination in a far better position than before. The result has been unquestionably unfavourable to the continued admission of the doctrine of the textural origin of pus. For the position of matters is such that the attentive study of the preparation carries to the mind the conviction, in spite of previously conceived opinions, that the relation of the adventitious corpuscles, with which the tissue of the inflamed cornea is beset, to the normal elements, is one of juxtaposition merely, the convincing fact being that, even in those parts of the cornea where the immigrant corpuscles are most numerous, the proper cornea-corpuscles are still seen to present their normal aspect and distribution.

This is particularly the case as regards the zone which surrounds the eschar, for here the normal corpuscles are from an early period indistinguishable; so that here, if the previous stages had not been studied, nothing would be easier than to persuade oneself that the old elements of the tissue had been simply transformed by a process of germination into the new.

Space will not allow us to reproduce the details given in the lecture as to the corresponding processes in the mammalian cornea: the differences between them and those which are observed in the frog, though important, are not of such a nature as to affect the general result. We must for the same reason omit the account given of unpublished observations relating to the behaviour of the ordinary tissue elements of the subcutaneous and intermuscular connective tissue, all of which tend to show that, *in adult animals*, these bodies take as little part as those of the cornea in the production of pus.

In the concluding part of the lecture the important question was asked whether or not we should be justified in regarding keratitis as representative of every sort of acute inflammation, and was answered in the negative. It may probably be assumed that all connective-tissue corpuscles, and all elements which have the same morphological significance, behave in the same way, when involved in inflammatory foci—for this reason, that they are essentially permanent parts of the organism, which have lasted during the whole of its past life and will last to its end. This being so, there seems to be no reason why the conditions present in an inflamed part should have any effect on them excepting an injurious one. Just as the adult organism is susceptible of but one sort of change when acted on by abnormal conditions—viz., a change towards decline or death—it is quite incomprehensible that any sort of injury should lead *in the adult cell* to such a renewal of life as is implied in the terms germination or proliferation.

But we know that all our tissues are not in this adult state; that, on the contrary, there are some in which the process of new growth or germination is continued and maintained up to the end of systemic life. A moment's reflection teaches us that this category includes a variety of tissues liable to acute inflammation (serous membranes), and a still greater number (mucous membranes and interstitial tissue of lungs, liver, and other solid viscera) in which subacute processes closely allied to it are specially apt to occur. In all these cases we have to do with tissues of which the physiological conditions are different from those of the cornea or common connective tissue, because in all of them germination is more or less persistent. It would therefore be quite unjustifiable, judging from the absence of phenomena referable to continuous growth in inflammation of connective tissue, to deny that it takes an important part in inflammation of mucous and serous membranes and of the solid viscera.

It is also of great importance to notice that until more complete observations have been made as to the influence of age on the inflammatory process, we have no right to assume that acute inflammation is not attended by an abnormal overgrowth of the natural tissue elements in very young individuals, even in such tissues as the cornea.

SANITARY WORK IN RURAL DISTRICTS.

THE meeting of the Society of Medical Officers of Health on the 19th ult. was of unusual interest. The paper read by Dr. Wilson, the medical officer of health for the combined districts of North Warwickshire, on the Sanitary Requirements of Rural Districts, was of exceptional merit, and the discussion which followed, in which the medical officers of the East and West Kent, the Berkshire, the Surrey, and the Shropshire combined districts took part, ranged much above the level of the ordinary discussions of medical societies. There was an earnestness in the reader of the paper and in the several speakers, and a thoroughness of conception of the responsibilities attaching to their duties, which, if on the one hand it awoke resentful feelings at the difficulties blunderingly raised by the Local Government Board, which had needlessly interfered with their performance, on the other hand gave earnest that circumlocution, as represented by Poor-law tradition, must presently yield to somewhat broader and truer conceptions of sanitary administration.

Dr. Wilson passed under notice successively the sanitary needs of rural districts, as illustrated by his experience in his own district. House accommodation, water-supply, and the modes of dealing with liquid and solid filth were dwelt upon in some detail, especially with reference to the action of the medical officer of health and the deficiencies in existing law. It was with regard to the view taken of the duty of the medical officer of health that the treatment of the paper and discussion seemed to us of greatest interest. It must be confessed that an opinion, justly or unjustly, has been gaining ground among the public that medical officers of health have been too commonly betraying a tetchiness in the performance of their duties, and a disposition to judge them not from existing law, but from possible future law, which has prejudiced the office in the opinion of many. It might have seemed, from the very large proportion which the amendment of the public health laws has borne in their public discussions, that they had been called into existence for the purpose of legislative tinkering rather than for the execution of existing law. If we were to give heed to some of these discussions we might almost imagine that Parliament in its public health legislation had acted equally without knowledge and without principle. Now, the discussion on the night of the 19th ult. showed a very different tone of thought existing among men who perhaps of all others might be selected from the medical officers of health of combined districts as representative men. First, there was a common concurrence as to the educational element of the medical officer of health's duties in reference to his sanitary authorities, and the necessity of patience in awaiting the results. Next, there was a general agreement on the importance of advising local authorities as to general principles, leaving them the widest latitude as to the means by which those principles might be carried out. In fact, the importance of dealing practically with each question which might arise upon its own merits, and not upon any arbitrary rule, was insisted upon, especially in reference to nuisances from liquid and solid filth in rural districts. The conception of the duties taken was, indeed, essentially that of helpfulness to the sanitary authorities in the difficult task they had to perform. That this is the prevailing tone of thought of our medical officers of health we have no doubt, but it is one for which they will not receive full credit until it has become more clearly understood how, in order to cover the efforts of aggrandisement of the Poor-law elements of Local Government Board administration, it has been necessary to make a scapegoat of the medical officers of health with local authorities, and frighten the latter with being "doctor-ridden."

THE LANCET.

LONDON: SATURDAY, MARCH 4, 1876.

THE reply of the Duke of RICHMOND to Lord WINMARLEIGH he other evening destroyed all hope of an Air Pollution Bill this session. In vain did Lord WINMARLEIGH and the Duke of NORTHUMBERLAND point out the magnitude of the evils inflicted by manufacturers on whole districts of the country. The Duke of RICHMOND admitted it all, and even said that the case had been understated rather than overstated. But the usual Governmental reply followed. The subject, of course, "would not be lost sight of," but, "having regard to the number of measures already in hand," nothing could be done at present.

This collapse of a most pressing reform is the more annoying because there really did seem reason to hope that something at last would be done. The Conservative Government, which came in with such loud promises of sanitary reform, excused themselves from dealing with the question in their first session on the ground of want of time, and the excuse was admitted. Last session they passed the Public Health Act, and again excused themselves from dealing with noxious emanations from factories by the plea that important reforms should not be introduced into a mere consolidating Act. Again the excuse was admitted, the more readily because, in response to pressure exerted by the South-Eastern, the Northumberland and Durham, and the Lancashire and Cheshire Sanitary Associations, some small remedial enactments were introduced into the Act. It was, however, distinctly understood by those most interested in the question that this consolidating measure was merely to serve as a prelude to real reform; and we certainly thought that Government intended to introduce a Bill on the subject this session. Now, however, the whole matter is quietly shelved, and the Government do not even suggest the now usual resource for avoiding a difficulty—the appointment of a Royal Commission.

It remains to be seen whether the large number of persons who are directly or indirectly interested in the repression of the noxious emanations from factories will remain contented with this inaction of the Government. The three Associations to which we have referred are pledged to vigorous action, and we can hardly believe that they will suddenly cease from labours that have already borne some fruit. They can, if they choose to exert it, bring great influence to bear. Considerable sums have already been subscribed, and more could easily be obtained if required. Their interests are protected in both Houses of Parliament by influential members. They have already accumulated a good deal of valuable evidence, and if they continue to work with the zeal they showed last session, they can hardly fail to be rewarded with success.

The nuisances complained of vary in different localities. In the North, on the banks of the Tyne and in the neighbourhood of St. Helen's, for instance, acid vapours, irritating to the lungs and destructive to vegetation, are most common. Many of the factories liable to offend in this way are under the control of the Alkali Act, which has just been slightly expanded in its operation. All such factories are subject to systematic inspection, and the inspection carried out under the supervision of Dr. ANGUS SMITH has hitherto been so vigilant that few complaints in regard to them have arisen. But others still evade the law and continue to pour torrents of acid into the atmosphere. We have ourselves stood in the grounds of an alkali works, the fumes of which were effectually condensed, and been half suffocated by the acid poured from the next factory, which chanced to be untouched by the provisions of the present Act. It is no wonder that alkali-makers complain of the unfairness of such an arrangement.

On the banks of the Thames the nuisance arising from acid fumes is at present far less intense than in the great manufacturing centres of the North. But the chemical factories of the district have increased greatly of late years, and are still increasing, and the mere acid fumes, which, though injurious and disagreeable, are not disgusting, are supplemented by organic effluvia which are often absolutely sickening. Much of this combination of bad smells, organic and inorganic, arises from the making of manure. If a handful of guano is drenched with sulphuric acid, a fair idea will be gained of one particular odour very common in the Blackheath district, when the wind sets the right way. Another may be successfully imitated by mixing glue with sulphuric acid, especially if the glue be contaminated with putrid meat. This last smell often pollutes the air for miles in the neighbourhood of Erith, and will not easily be forgotten by those who have experienced it.

Further down the river, at about Greenhithe, another nuisance begins, which has been the subject of much litigation already. It arises from the cement works. In these works chalk is ground with Thames mud, the mixture dried and burnt in lime-kilns, the mass so obtained being sold in fine powder as Roman cement. The gases evolved in this case are chiefly products of imperfect combustion, the deadly poison carbonic oxide being an important constituent of them. Several injunctions in Chancery have already been obtained against the manufacturers of this cement, but the river is still often obscured by the white smoke emitted from their kilns, and it has even been alleged that serious danger to navigation has been caused by it.

For most of these nuisances the remedy is easy, and merely requires enforcement. It may be taken as a general rule, in regard to noxious fumes, that what water will not absorb fire will burn. Acid fumes can always be absorbed by water. Alkali-makers are compelled to absorb their hydrochloric acid in this way, and we have seen manure-factories in which the silicon fluoride and other irritating fumes were removed in a similar manner. Organic emanations, such as those from glue-works, are entirely destroyed by fire, and we have recently visited manure-works in which all danger of bad smell was avoided by passing the gases which came from the mixing-chamber through the boiler fire. The works in which these precautions were taken were in the full tide of prosperity, and were quite able to compete with their less carefu

neighbours. It is therefore obvious that such precautions involve no ruinous expense.

The last consideration is a very important one. The factories which at present cause so much injury and annoyance are of great importance to the country, and cannot be stopped without great public as well as private loss. We should not urge any measure which would be likely seriously to cripple them without the most urgent necessity. But we are convinced that they would not be crippled by a well-considered measure of control, and that, on the contrary, their owners would gain largely by being saved from the risk of private proceedings, which are not only uncertain in their issue and terribly expensive, but are unfair in their results, as inflicting penalties upon single manufacturers while the others remain unmolested.

Nothing but an Act analogous to the Alkali Act will permanently cure the evil. Manufacturers who carry on their business at constant risk of injury to their neighbours should not, and we believe would not, as a rule, object to inspection. The avoidance of nuisance would seldom entail serious expense upon them, and would sometimes bring a profit, as it has to the alkali-makers. A few difficult cases, of course, exist, and these might be specially provided for, but the great bulk of the evil might easily be remedied if the Government resolved to act up to their promises, to risk the loss of a few votes, and for once to ignore that great sanitary bugbear, "vested interests."

We regret that the South-Eastern Sanitary Association was not ready at the opening of Parliament with a private Bill for the suppression of the evil in question. This course of action was advised by one of the ablest members of the late Government, and was, we thought, decided on by the Association. Such a Bill could not have been passed by a private member, but it might easily have been pushed to a second reading; and it might have been adopted by Government, and, at any rate, would have acted as a powerful stimulus towards action. We trust the alteration of plan indicates no new-born infirmity of purpose in the councils of the Association.

SOME important, but, unhappily, not very reassuring facts relating to the origin of Rabies canina are recorded in the current number of the *Veterinary Journal* by Mr. G. FLEMING. Hitherto the question of the spontaneous origin of rabies has remained an open one. The admirable summary of our knowledge on the subject given by Mr. FLEMING in his work on Rabies led to the conclusion that the evidence on either side was indecisive. The alleged examples of spontaneous origin were not so clear as to set the question at rest, while some undoubted facts, especially the freedom from the disease of some countries, gave countenance to the opinion that rabies does not develop except as the result of contact with poison from an animal similarly diseased. One aspect of the question of the spontaneous origin of rabies is that of its production by the bite of a non-rabid animal. Our readers will remember that several cases have during the last few years been recorded in our columns, in which death from what appeared to be hydrophobia succeeded the bite of a dog that was apparently not diseased. The cases now recorded by Mr. FLEMING are examples of a similar occurrence in dogs. In man some doubts may remain concerning the alleged facts, in consequence of the various diseases of the nervous system which arise spontaneously, and which sometimes simulate very closely the symptoms of hydrophobia. In dogs, however, there is much less room for such uncertainty, and the cases recorded by Mr. FLEMING have all the definiteness of a designed experiment. They are the more valuable as coming under the direct observation of one who has made the disease his special study, who is one of our best authorities upon it, and who, moreover, was previously inclined to an opinion the reverse of that which he believes to be indicated by the facts recorded.

For many years no case of rabies had been met with in the neighbourhood of Rochester or Chatham, but in the beginning of November a retriever dog was destroyed with what appear to have been characteristic symptoms of rabies: pendulous lower jaw, flowing saliva, vacant expression, weak hind-legs, and half-unconscious movements. This dog had always been kept carefully tied up except when taken out for exercise. A month before it had been "worried" by a large dog belonging to a publichouse-keeper—*a dog which is still alive and well*, and has never been observed to be in any way out of health. So far as could be ascertained—and it was never allowed out alone,—it had been bitten by no other dog. On November 6th this retriever, while suffering from the disease, bit a small dog with whom it was usually on good terms, and also two other dogs in the street. On Nov. 21st the small dog thus bitten was brought to Mr. FLEMING with the characteristic symptoms of "dumb-madness," with pendulous lower jaw, partial protrusion of the tongue, paralysis of hind-limbs, and stupid dull expression. It was able to swallow with great difficulty. These symptoms had existed for two days, and on the third, being nearly dead, it was destroyed. An autopsy showed all the thoracic and abdominal viscera to be healthy; no trace of entozoa could be found. The membranes of the brain were congested, the anterior lobes somewhat softened and hyperæmic, but the nervous system appeared otherwise healthy.

The affection of the small dog may be taken as certain proof that the disease from which the retriever suffered was rabies. The proof appears as certain as canine habits will permit, that the disease in the retriever either arose spontaneously or was produced by the bite of the still healthy animal. Were this an isolated instance, we should incline to the former explanation, but taken in conjunction with the cases recorded in our columns (THE LANCET, Oct. 10th, 1874) and the instances which have been met with in New York and elsewhere, the probability points to the bite as the cause of the disease. The greatest interest attaches to the condition of an animal thus communicating or rather conferring rabies. The period of incubation of the disease is in some instances very long, and we do not yet know whether it is communicable during that period. No doubt the animal will be carefully watched for a long time to come, and it would be well to exclude by careful inquiry the possibility that this dog may have been at some time himself bitten by a rabid animal, perhaps away from home. As the simple positive facts of the case stand, they certainly afford support to the opinion that rabies may arise from the bite of an apparently healthy dog.

An extensive outbreak of the disease appears to be at the present time in progress in North-western Yorkshire. During the snowstorm of December, a dog, apparently "mad," coursed through Swaledale and Wensleydale, biting sheep, dogs, &c. A large number of sheep bitten have since died with symptoms of rabies, while at Swaledale Head half a dozen dogs with symptoms of the disease have been destroyed. Several deaths of persons bitten have already been recorded.

THE QUEEN'S Speech left a margin for hope with regard to measures not specifically mentioned. When the time comes to deal with "local taxation," either as a whole or in detail, we trust it will be found possible to combine with the relief of local burdens some substantial relief of local needs. Taxes on industry have been long condemned as drags on enterprise and self-help. Taxes on public charity, whether they take the shape of ratings on hospitals or of pecuniary pains and penalties attached to the creation and use of funds legitimately available for the succour of distress, should be placed under the same ban. Public opinion has pronounced against the policy, or rather the impolicy, of heaping up instead of lightening the burdens which now press so heavily on the effort to relieve poverty and sickness in any particular stratum or *locale* of the population. It is time the judgment of the people took the form of law. The practice of levying rates on hospitals, and institutions for the relief of distress of any kind, has neither the excuse of expediency nor the glamour of "right." It is not conducive to the advantage of the many to tax or hamper the generosity of the few. The funds subscribed for the support of medical charities are in a very large and real sense given and applied to the general public good. No hospital is a *local* institution. The work it does, the service it renders, is work and service for the State. It is a mere matter of convenience that such an institution is located in a particular district. To make it tributary to local obligations is irrational and absurd. The only obligation a medical charity owns is to give the largest and best measure of remedial succour to the sick-poor applying for its aid. With what wisdom or show of consistency can the State or the municipality interpose another obligation to the injury of the first? We do not characterise the practice of rating public charities—more especially medical—and of levying imposts and dues upon moneys given or bequeathed for their support, too strongly, when we term it shortsighted spoliation. It is shortsighted, because every sovereign sacrilegiously extracted from the coffers of such a charity is good seed, sown for the public health, plucked out of the ground, and this inflicts a public loss which must be multiplied tenfold before it can be estimated. It is spoliation, because the money appropriated has been dedicated to the public good, and cannot be justly or honestly diverted to a local purpose. We trust the Legislature will not long delay the redress of grievances so monstrous as the rating of hospitals and asylums, and the levying of dues on moneys left charitably for public purposes.

Again, the supposed evil of "centralisation" should no longer be permitted to play the part of a scarecrow. It is discreditable to our progress in the art of self-government that a satisfactory solution of the problem, how to secure local control of central funds employed for a local purpose, has not yet been discovered. The doctrine that at least some measure of control by a central authority ought to be the condition of every grant from the public treasury in relief of local charges, is neither sound in principle nor salutary as a guiding maxim of practical economy. There must be other and less objectionable methods of protecting the general interests from the pressure of local exigency. It cannot be absolutely necessary to stultify the fundamental principle of local government whenever the Local Government Board—or any other branch of the central governing authority—is asked to minister to the relief of local needs. If local government by local authorities is not the best form of rule for the development of those high conditions of order and enterprise essential to the prosperity of the State, let some better constitution be adopted; but while the form is preserved, a systematic destruction of the substance must be too puerile to be called statesmanship, and too weak to inspire respect. Either local government is right, in the sense of being expedient, or it is wrong, in the sense of being unsuccessful. If the latter be the fact, statesmen should come forward boldly, with the courage of their convictions, and supersede the system which has been shown to be imperfect, by something better. If the existing *régime* is sound in principle and practice, it should be respected in all its requirements.

We are induced to insist thus positively on the need of a *thorough* policy in respect to local government and administration because the time has undoubtedly come when a large measure of relief must be passed in aid of local burdens. And it is most desirable that such relief should not be coupled with any vexatious enforcement of the condition of central control—a condition especially offensive when it is pressed under cover of some humane or benevolent purpose in respect to which the Legislature claims to be animated by more exalted motives than are supposed to inspire a local authority. Take, for example, the provision which refuses the grant of four shillings per head for lunatics in "workhouses," or, what is the same thing, asylums such as Leavesden and Caterham, classed as "workhouses within the meaning of the Act." It is all very well to say that this restriction has been imposed with a view to secure the removal of the great body of lunatics to asylums constructed for the cure of mental disease. The *practical* consequence of this enactment is that the wards of asylums which ought to be appropriated for "curable cases" are crowded with inmates who might be quite as well, or even better, cared for in the wards of a well-managed workhouse or workhouse asylum. There is no valid reason why imbeciles, idiots, and harmless lunatics, who cannot possibly be cured, should not be housed in the lunatic wards of a workhouse. It is true the workhouse is under control of the local board of guardians; and we are free to admit that "guardians" are not commonly very advanced or intelligent administrators. It is even possible that they are burdened with a constitutional proclivity to *brusque* officialism and petty parsimony. But the Visiting Committees of asylums are only one degree more liberal. The whole gist of the distinction—from the Government point of view—lies in the fact that asylums are *in theory* more directly under control of the central

authority. It is, in truth, this consideration that impels the Legislature to refuse the grant, in relief of local funds for the support of lunatics, to the lunatics in workhouses; and, as we have said, the practical consequence may be seen in the overcrowding of asylums with cases which might be advantageously cared for elsewhere. We admit the difference between the amount of central control in an asylum and in a workhouse is almost wholly imaginary and sentimental; but this only makes the distinction the more vexatious. It is time this nonsensical prejudice against local administration was got rid of at St. Stephen's. It is strange that local magnates so commonly lack the courage to assert the claims of the local principle when they get into Parliament. They extol its virtues and insist on its obligations strongly enough within the hearing of their parish bells; but in the two Houses of the Legislature they forget the lesser dignity in the magnificence of the greater. That is neither very wise nor altogether respectable. We have unbounded faith in the principle of local government. We recognise its weaknesses, and do not hesitate to censure the pitiful short-sightedness and wrongheadedness of many of its friends and exponents. The little Jacks-in-office of local boards of guardians are infinitely contemptible. Let the Legislature compel local authorities everywhere to do their duty, and in such a way as to help forward the general good. Let Parliament insist on uniformity of policy as far as uniformity is necessary. Meanwhile, in carrying out the obvious principle that local boards have a valid claim on the central treasury for aid in the discharge of all functions which contribute to the *public* welfare—such as the relief of the poor, the care and cure of lunatics, and the preservation of health,—it is worse than childish, it is an offence against public prudence, to insist on some petty assertion of central authority, real or imaginary, when a boon is granted or a grievance redressed. We venture to hope that this growing practice may be abandoned. It is shortsighted and impolitic. It is as disastrous in result as it is unsound in principle.

IT is a discreditable reflection, whether as viewed in a national, commercial, or sanitary aspect, that, towards the close of the nineteenth century and in the absence of either war or famine, we should be compelled once and again to make Scurvy the subject of any prominent remarks. But it is a miserable fact that during the past month or less the *Royal Sovereign*, the *Prince Rupert*, the *Talisman*, the *West Ridge*, and the *John Peacock*, all large and fine British ships, have arrived in the United Kingdom each with a great number of cases of scurvy on board, some of which may be seen in hospital at Greenwich, Queenstown, and Falmouth. A large proportion of these cases are, or have been, very severe, so that some of the men were compelled to be carried on shore. Some months ago the *Bremen*, the *Reciprocity*, and another vessel whose name has for the moment escaped us, arrived at Callao and San Francisco with similar batches of miserable wretches, nearly all suffering more or less from scurvy. So that within the past half-year the British Mercantile Marine must be accredited with certainly more than seventy cases of this disease, taken from vessels whose owners are supposed to be classed among the merchant princes of the kingdom. In 1867, as most of our readers are probably aware, a short Act was passed under the auspices of the Duke of RICHMOND and GORDON, that contained, among other sanitary enactments, a special provision relating to lime-juice, so as to ensure the good quality of the article provided. Since that date, and up to the beginning of last year, scurvy had steadily decreased among the crews of long-voyage ships, and even in the *Dreadnought* Hospital a case was comparatively seldom seen. Now, as it appears, the disease has again revived, and we have once more to cast about for a common cause. That cause, as we take it, is not far to seek. A special inquiry ordered by the Board of Trade has just been held in London and at Liverpool in the case of the *Royal Sovereign*, a vessel that arrived at Falmouth some five weeks ago with eighteen out of a crew of thirty affected with the disease. The report of Dr. HARRY LEACH and Captain WILSON, the inspectors in this case, has not yet appeared as a Parliamentary paper, but a great deal of the evidence adduced in the course of the inquiry has already been published. This evidence, as it appears to us, went to prove most indubitably that a considerable quantity of bad beef was served out and eaten during the voyage, and that, though an abundant quantity of lime-juice was given, only four or five so-called fresh messes were served out during the passage from Karachi to Falmouth, which extended over 126 days. Here, then, were direct exciting causes, for it requires very little science to show that no amount of lime- or lemon-juice will neutralise the bad results produced by eating meat that has wholly lost its nutritive properties or is in a state of semi-decomposition. In another case, which eventually came before the stipendiary magistrate at Liverpool, lime-juice was provided in insufficient quantity, no other antiscorbutics having been given. The same carelessness was exhibited in two other instances last year, and in both cases the captains were summoned by the Board of Trade at the Thames Police Court and heavily fined.

This resuscitation of an eminently preventable disease has of course occurred exclusively on long-voyage sailing ships, a class that, as a rule, are, commercially speaking, driven so hard by competition with steam and from other causes, that it is, we may suppose, one of the chief objects of the owners to economise working expenses in every possible way. Hence the provisioning of ships with Kansas and Texan beef, doling out once a month one ration of preserved meat, or sending a ship to sea with an allowance of antiscorbutics barely sufficient for the outward passage. Putting aside sanitary and humane considerations altogether, it is astonishing to us that shipowners do not discern the economy of feeding their men well and properly. There are shipowning firms in the kingdom who never hear of a case of scurvy on their vessels, and yet who are very conservative in their system of victualling crews even for the longest voyage. But they take care to buy no provisions (whether meat or small stores) but those of the best quality, and have officers in their employ who know how to keep such provisions in good order during the voyage. Such ships were free from scurvy long before preserved provisions were thought of, or the bad quality of lime-juice was discovered. And it is unpardonable that, at a time when ways and means of storing all kinds and varieties of diet abound, and good animal food of the old

kind can readily be bought, scurvy should, as a consequence of carelessness, still be perpetuated in the mercantile marine of this country.

Annotations.

"Ne quid nimis."

THE LONDON SUBURBS.

WE would draw attention to the unsatisfactory condition of our suburban districts from the rapid increase of cheap houses, built by speculative builders in unsuitable localities, of worthless materials, and with defective sanitary arrangements. For some years the sanitary condition of the suburbs has been the subject of unfavourable comment, and we feel convinced that the time has arrived when strenuous efforts should be made, not only to prevent further extension of the evils complained of, but also to remedy as far as possible deficiencies caused by past neglect. The demand for houses with rents ranging from £25 to £40 a year, with easy access of the City, has increased in direct proportion with improved railway accommodation. The best sites have long since been occupied, and the new buildings are generally erected on ground formerly passed over as unsuitable. A journey by rail out of London in any direction shows how much this is the case. We see rows of houses springing up from low-lying fields, the natural drainage of which is so bad that sheets of water remain for weeks after a more than ordinary downpour of rain. No provision that we have been able to discover seems to be made in these cases to carry off the surface-water and dry the soil previous to the commencement of building operations. Where the earth is marshy, and water actually oozes up when the soil is dug out but a few inches, the foundations are raised on heaps of cinders, the refuse from innumerable dustbins, containing organic matter in various forms and of doubtful antecedents. These houses are not unfrequently in a state of bankruptcy from the date of their foundation. The plan generally pursued is for the speculative builder to secure an advance of money from the ground landlord sufficient to lay the foundation; another advance is obtained to raise the walls, another to complete the roofing, and so on. The speculative builder, in order to get a profit on the transaction, runs up the houses as quickly as he possibly can, using the cheapest materials; and here he has no difficulty, since ill-baked, badly-shaped bricks, rotten mortar, thin planks of green, unseasoned wood, and chipped slates have become "specialties" in the building trade. No wonder that shortly after the house is disposed of the walls crack, the doors, floors, and windows shrink, cornices and mouldings fall off, and the whole looks as dilapidated and disreputable in a few months as if the house had endured the neglect and vicissitudes of years. Owing to their situation there is frequently a difficulty in obtaining a proper outfall for the drainage (this, however, is a difficulty not confined to houses of this class alone in the suburbs, the better houses being often abominably accommodated in this respect), and the sewage is received into cesspits or poured into drains which empty themselves into the neighbouring ditches. Those who have visited any of the northern suburbs will doubtless call to mind the stinking ditches so common at Harrow, Willesden, Finchley, Barnet, &c. But more dangerous than these open drains are the cesspits. Anyone passing the numerous market gardens in the south-western district, now so rapidly being converted into wildernesses of brick, will remember the tall poles, with another pole slung obliquely across, at one end of which a bucket is generally to be seen suspended. These poles stand over wells, from which the water for the gardens is drawn. These wells are extremely shallow, for in this district the water is so near the surface that a pit a few feet deep rapidly fills with it. Yet it is in such a soil that houses are now being built by hundreds, most of which have no drainage whatever, and are provided only with cesspits, and these being constructed about as perfectly as the houses, their contents pass readily through the porous soil directly to the wells, on which, in many instances, the inhabitants have to depend for their water-supply. Sometimes there are neither drains nor cesspits: in one case, a house recently constructed and passed by the surveyor of the local board was found to have simply a small hole dug a little way into the ground to receive the sewage, whilst the rain-water pipes were simply stuck in the ground! We hope during the present session the attention of the Government will be drawn to this subject. The extension of the Artisans' Dwellings Act to the suburbs is urgently called for, and provision should be made to secure proper inspection of houses. The men now employed as surveyors under the local boards are miserably paid, and, consequently, are exposed to temptation; and if bribes are not actually accepted, it is evident that the duties are often performed in a perfunctory manner. There ought also to be some easy and inexpensive means by which a tenant could get a landlord punished for letting a badly constructed house,—a substantial fine if the offender was solvent, or imprisonment with hard labour in the case of a bankrupt rogue. The "adulteration" of houses should be most severely dealt with.

THE PEDESTRIAN FEAT AND ITS LESSONS.

THOSE medical men who had the pleasure to see Mr. Weston after doing successfully his marvellous feat of walking 275 miles in 75 hours were amazed to find him in better condition than after the previous walks of, respectively, 109 miles in 24 hours, and 180 miles in 48 hours. Without commending, we may admit that he does not appear to have suffered from his long walks in England. Towards the end of the 275 miles he was walking at a pace which ordinary walkers would find it difficult to keep up with. He did the last sixty miles without a rest, and the last thirty-six miles at the rate of four miles and a half an hour. Not the least creditable and noticeable fact is the perfect serenity in which Mr. Weston is to be found at the close of such an effort, and the good temper with which he greets either friends or medical critics who try to detect flaws in his physical condition. On this last occasion his pulse was regular, and only a little quicker than usual, and his temperature was slightly below the normal figure. His feet and legs were free from swelling, and the former were unblistered. What makes this feat, and the good physical condition of Mr. Weston at the end of it, the more remarkable is that at the outset he laboured under a bronchitic cold, so bad that Dr. Pavy offered to give him a medical certificate of temporary unfitness. But with characteristic pluck and perseverance he went at his great task, and accomplished it triumphantly amid the plaudits of thousands of spectators. Mr. Weston disapproves of running. Walking is according to nature, in his view; but he leaves running to animals differently constituted. We cannot defend such a long strain upon the muscular and nervous systems, but we have great pleasure in bearing testimony to the genial and cheerful spirit of Mr. Weston, to the entire absence of coarseness in his athleticism, and his willingness to make his walking feats subservient to scientific purposes.

These feats of Weston, consisting as they do of the performance of such an unprecedented amount of prolonged

muscular work, may be looked upon as affording an invaluable opportunity of investigating the chemical phenomena concerned in muscular action. Liebig taught that muscular work involved the destruction of muscular tissue—that from the oxidation of the tissue the power arose. Under this view, to maintain the capacity for work nitrogenous food must needs be consumed in proportion to the work performed to supply material for the repair of the expended tissue. Thus the nitrogenous alimentary principles become invested with the utmost degree of importance in relation to the performance of work, affording, as they would do, through their conversion into muscular tissue, the source, and the only source, of muscular power. The researches of Fick and Wislicenus, conducted in 1866, suggested doubts of the validity of Liebig's views, and since then a reactionary movement has set in, and been carried to such a point that certain Continental physiologists have expressed themselves in directly opposite terms, and asserted that the force manifested in muscular action is due to the oxidation of non-nitrogenous matter—as fat, starch, sugar, &c.; that the muscle is not destroyed or oxidised in its action, but merely serves as the medium for the conversion of the generated force into motor power. As a simile, it is stated that the steam-engine is not itself converted into power, but is only the instrument for the production of power through the fuel with which it is supplied; and so with the muscles, instead of being oxidised, and power being thereby produced as was formerly believed, it seems that they simply form the medium or instrument for the liberation of the latent force contained in non-nitrogenous alimentary matter as motor power.

From the products eliminated from the system evidence is supplied of the nature of the action occurring, and with the extreme amount of muscular work performed in this case, more conspicuous evidence may be looked for than is ordinarily obtainable. As far as the results yet go, they stand at variance with the tendency of modern ideas, and point to greatly increased muscular disintegration, certainly as a concomitant, if not as a source, of the muscular work, and with this increased amount of eliminated nitrogen an increase in the sulphates and phosphates, harmonising with the fact that sulphur and phosphorus enter into the constitution of the nitrogenous compounds forming the basis of the tissues. On the other hand, chlorine, which does not exist in these compounds, shows no increase. A new fact is here disclosed.

These investigations touch upon the foundation of the principles of alimentation; for, according to the actual consumption or utilisation of material so should the supply be regulated to best maintain the capacity for sustained muscular action. The question at issue has thus a practical bearing in reference to the food best adapted for armies on long march, and others engaged in arduous labour.

We understand that Weston is still under Dr. Pavy's close observation, and will continue so during and after his six days' walk next week, when it is hoped that more complete results will be obtained than have yet been recorded.

DANGERS OF FOOTBALL.

WE have received some interesting communications on this subject, the general tenor of which supports the remarks we have previously made. We readily admit that football, properly played, stands high among athletic games, both on account of the amount of exercise it affords in a short space of time, and also from its inexpensiveness, rendering it available to all classes. Our protest was raised against the manner in which the game is now played. Two sets of rules are, it seems, used by football players—namely, those known as the "Association," and the "Rugby" rules. The game as played by the Association rules is admitted to be more scientific and interesting to watch, but it is contended that "fewer can play in it, and that it affords exercise for the legs only, none for the arms and back," and it is maintained that "the holding, shoving, &c., of the Rugby game, are, from the latter point of view, most valuable features." In this we cannot agree. If football were played all the year round, and no other games available, there might be some weight in the argument for playing the game so as to give exercise to the muscles of the upper extremities as well as the lower part of the body; but football is only played during a portion of the year, and during the summer months cricket and rowing are exercises that favour the development of the arms and upper region of the trunk. The Rugby game has had its dangers increased of late years by the practice of "picking up" the ball on all occasions, which encourages "tight scrimmages." These occasion a heavy strain on the backs and chests of the players. "Picking up" also makes weight of more importance in selecting a team than was formerly the case. As a strong feeling against football already exists in the minds of many persons, we would urge football players to draw up a code of rules to be universally adopted, modifying the most objectionable features of the game, if they would avoid the inevitable pressure from without which will be brought to bear against the game if more fatal accidents occur.

KNIGHTSBRIDGE BARRACKS.

ON Tuesday night a conversation on the subject of the Knightsbridge Barracks took place in the House of Lords. The subject was introduced by Lord Sandhurst, who rose to inquire of the Under-Secretary of State for War on what grounds the decision of the late Government with respect to the Knightsbridge Barracks had been reversed. He stated that the Commission which in 1863 considered the question of those barracks reported very strongly against them, not only on account of the bad condition of the buildings, but also on account of the site on which the barracks were placed. The argument had been raised in favour of the site—viz., the great value which many persons attached to having a cavalry regiment available in the immediate vicinity of an open space like Hyde Park. This argument did not recommend itself to him, for he thought everybody should deplore the idea of ever seeing the Household Cavalry engaged in aiding the civil power. Lord Cardwell, who stated he took part in the debate rather as a witness than an engineer, quoted some passages from some official correspondence which passed in 1866, when General Peel was Secretary for War. One was to the effect that the Quartermaster-General informed His Royal Highness that after considering the report of the Army Sanitary Committee, "it appears to the Secretary of State most desirable that no time should be lost in acquiring a new site. Under all the circumstances of the case, and the difficulties attendant thereon, it appears to the Secretary of State that the site of Millbank may be worthy of consideration, and he would be glad to be favoured with the further opinion of His Royal Highness." The Duke of Cambridge and Earl Cadogan replied for the defence. The latter raked up the old grievance of the charges that had been made against the conduct of the soldiers quartered at the barracks. He was not aware of any general wish for the removal of the barracks; he had received reports giving a very favourable account of the sanitary condition of the site, and characterised the movement against the reconstruction of the barracks as an agitation set on foot by house speculators. The Duke of Cambridge concurred with Lord Sandhurst in wishing they had more space at Knights-

bridge for the purpose of barrack accommodation. He did not see the necessity, in a sanitary point of view, of the men being separated from the horses; indeed, he believed it would be found that the most healthy cavalry barracks in the country were those in which the rooms of the men were over the stables. No doubt there was a certain miasma from stables, but by good shafts and good ventilation that could be got rid of. He admitted the document which had been quoted by Viscount Cardwell, but he had agreed with the matter stated in that document solely because he believed *that at the time the question had reduced itself to that of the choice of another site.*

The matter must, sooner or later, come before the House of Commons, when it will be definitely settled. One question ought then to be discussed—how it happened, in 1866, that both the barracks and site were condemned on account of their insanitary condition, and the question of removal received for a time the approval of the Duke of Cambridge, whilst in 1876 the site is reported on "very favourably for its sanitary condition," and the Duke of Cambridge is now the staunchest opponent against the proposal for removal. If in 1866 the military authorities could see no necessity for retaining our "Piccadilly defenders" in their present barracks, and entertained the proposal for their removal to the more spacious site at Millbank, and which some authorities consider equal in strategical importance to Hyde-park, we can see no valid reasons in the arguments raised against the removal of the present barracks in 1876. Stronger arguments than those hitherto advanced by the Duke of Cambridge and Earl Cadogan will have to be brought forward before the public will be convinced that there is any necessity for perpetuating a nuisance and disfigurement on what the Duke of Cambridge fitly terms a "most admirable situation."

LIGHT.

RECENT experiments, physiological as well as physical, force upon the mind the possible influence which the most all-pervading of all natural phenomena may, and probably does, have upon our being. The different behaviour of plants during light and during darkness, and the different chemical powers of chlorophyll under these two conditions, have long impressed upon biologists the fact that light possibly has a direct influence upon the animal body. Notwithstanding this, and the all-important facts which we owe to Newton and other early workers in the field of photography, our instruments have hitherto been of too coarse a nature to allow us to measure accurately the effects of light, and so enable us to place it upon the same footing as the other physical forces. Thanks, however, to such men as Sir William Thomson and Mr. Crookes, who have given us, the one a galvanometer of excessive delicacy, and the other a photometer, whose reactions have lately astonished the scientific world, we may look forward to the time when we shall perhaps measure the effects of light as easily as we can now record changes of temperature.

As long ago as 1843 Sir William Grove devised an experiment which he thus describes in the last edition of his work on "The Correlation of the Physical Forces":—

"A prepared daguerreotype plate is enclosed in a box filled with water, having a glass front with a shutter over it. Between this glass and the plate is a gridiron of silver wire; the plate is connected metallically with one extremity of a galvanometer coil, and the gridiron of wire with one extremity of a Breguet's helix—an elegant instrument formed by a coil of two metals, the unequal expansion of which indicates slight changes in temperature; the other extremities of the galvanometer and helix are connected by a wire and the needles brought to zero. As soon as a beam of either daylight or the oxyhydrogen light is, by raising the shutter, permitted to impinge upon the plate, the needles are deflected. Thus, light being the initiating force, we get chemical action on the plate, electricity circulating through the wires, magnetism in the coil, heat in the helix, and motion in the needles."

Twenty-two years after this highly suggestive experiment, Crookes has demonstrated that light is immediately convertible into motion; and Dewar and McKendrick, May and Willoughby Smith, have shown that light can influence the electrical condition of animal tissues, and the conducting power for electricity of at least one metal (selenium). Dewar and McKendrick have shown that the impact of light upon the eyes of mammalia, birds, reptiles, amphibia, fishes, and crustaceans produced a variation amounting from 3 to 10 per cent. of the normal current. If the two electrodes of a galvanometer be placed, the one on the cornea and the other on an abraded surface on the back of an animal (say a frog), a deflection of the needle will be produced the instant that light is allowed to impinge upon the retina.

The suggestiveness of the various experiments to which we have alluded no one will gainsay, and the possible importance of them to the inhabitants of murky towns, in which the sun's rays are dimmed almost always to a religious twilight, seems to us very great indeed.

THE EAGLEY EPIDEMIC.

THE conditions of origin of the epidemic of typhoid fever at Eagley have been very clearly brought out by the investigation of the medical officer of health, Dr. John Robinson, and have been described by him in a report recently presented to the Turton Local Board. They fully bear out the opinions already expressed. The facts of the report are as follows:—The sudden outbreak of Feb. 2nd pointed strongly to the contamination of some common ingested material. Some of the cases deriving their water-supply from different sources, it appeared improbable that the poison was conveyed by the water. Attention being directed to the milk, it was noticed that the supply to all was from the same source. A distinctly unpleasant odour was noticed in some specimens of the milk. The occurrence of some cases at the farm from which the milk came gave the opportunity for an unexpected examination. One cow was found in what Dr. Robinson maintains was a state in which its milk was unfit for consumption. A day or two afterwards, when the veterinary inspection was made, the animal was already better. A specimen of milk, drawn at the time of Dr. Robinson's first visit, he declares to have had a green colour and an unpleasant smell and taste. He notes that it is to be regretted that no examination of milk taken just before the outbreak could be made. He does not, however, incline to the opinion that this milk was the cause of the outbreak, but believes that it modified the characters of the disease. The most conclusive evidence of contamination of the milk with impure water was obtained on a visit a day afterwards. The Eagley milk-can was "in a filthy state." All the water used for dairy purposes was obtained from a small stream running past the door, and collected in a tub. This stream, a little higher up its course, ran by a new mill in process of erection, and had been used as a convenient place for defecation by the workmen employed in the erection of the mill. Large quantities of fæcal matter were found on the banks of the stream. The water from this stream was admitted to have been used for rinsing out the milk-cans! The report ends with the practical and highly necessary suggestions that a supply of pure water should be provided for all the inhabitants of the district, the existing streams should be protected from contamination, and the whole district should be sewered.

We can hardly assert more strongly than by the repetition of the simple facts of this report, the need for

supervision of dairy farms. It is hardly credible that such insanitary conditions should be allowed by the owner to exist at a farm supplying milk to so large an area, but the fact shows how hopeless it is to expect reform except on compulsion. Little hardship would be involved. It appears that a source of pure water existed in a pump at a short distance. A pipe from this pump to the farm would have secured pure water for all necessary purposes at little cost. Whether at great or little cost, the safety of the population from such outbreaks can only be secured by due supervision and compulsory alteration of all insanitary conditions. Dr. Robinson deserves much credit for his prompt and sagacious investigation and discovery of the source of the mischief.

THE BATH UNITED HOSPITAL.

AT the annual meeting of the subscribers to the Bath Royal United Hospital, a question was brought forward which appears to have excited much interest among the supporters of the charity and the medical practitioners of the town, and to have been the subject of much discussion by the medical staff and Managing Committee. It is a matter which was long ago forced upon the attention of the managers of London hospitals, and by them settled, and, as time has shown, very wisely settled, by an absolute unanimity of action. Ever and anon it presses itself on the attention of the governing bodies of our provincial hospitals. The question was, Should the professional staff of the hospital be increased by the appointment of junior officers to take charge of the out-patient department. An out-patient department exists, the number of patients in attendance is considerable, and it was urged, on behalf of the public, that the physicians and surgeons who have charge of the beds find, or should find, such sufficient scope for their energy, and demand upon their time, in attention to the in-patients under their charge, that they cannot, or ought not, to be expected to devote to the out-patients the time necessary for their due and punctual treatment. It was stated that, as a matter of fact, the time out-patients were kept waiting before they were seen was discreditable to the institution, and contrasted unfavourably with some other charities of the place. It was not alone by the lay members of the governing body that the change was urged. The subject was brought forward by Mr. J. S. Bartrum, an old and well-known member of our profession, who urged that the profession and the hospital would benefit largely by the proposed addition to the working staff of the hospital, and that a limitation to the period during which the physicianships and surgeonships to the hospital were held would be a wise arrangement. The junior members of the staff would then be in valuable training for the senior posts. Dr. Falconer, the president of the hospital, appeared to give an implied concurrence with the proposal.

To the present staff of the hospital the proposal appeared to be unpalatable, and it was strongly opposed by Messrs. Gore, Stockwell, and Fowler, the three surgeons, on the ground that the work was not more than could be well and thoroughly done. The objection to the change on the part of the staff was said to be unanimous. The report of undue delay in the treatment of patients was declared to be unfounded, and it was stated that the physicians and surgeons in charge of the wards preferred to see the out-patients themselves, and to select the cases for admission. This practice Mr. Gore threatened to continue if new officers were appointed, so that the new members would have nothing to do.

In the face of this difference of opinion, it is of interest to turn to the published facts of the work done at the hospital. The institution contains 120 beds, which should give 20 to each member of the staff, although from Mr. Gore's statement it would appear that not more than 15 are on an average in constant occupation. Within the building 900 patients are annually treated. The annual number of out-patients is stated to be more than 8000. This will give to each physician and surgeon a daily average of at least a dozen new cases to receive attention. The work is not excessive; if sufficient time be given to it it may well be done by one man without assistance. But it cannot be doubted that the work would, as a rule, be better done by two than by one. Fifteen or twenty beds offer a fair field for the spare energy of a man in busy practice, for a physician at any rate; and a dozen new cases daily in the out-patient room properly investigated, with the proportionate number of old cases, will afford several hours' work for another. Moreover, we think there are other reasons why the question should not be settled merely by a consideration of the amount of work a man can get through. Our provincial hospitals have a great function in perfecting the education of the local practitioners, and it is important that this should be furthered by all practicable means, and rendered as widely effective as possible. There is no better way in which it can be done than by giving junior members of our profession fields for useful work from which practical knowledge may be gained and the science of medicine and surgery advanced. Moreover, it is of great importance that when the senior members of a hospital staff are disabled for their duties by illness or want of rest, due assistance should be at hand for their relief, and that they should not have to rely on the help of a colleague equally busy with themselves for the perfunctory performance of their duties.

It is of some significance that the strongest opposition to the proposed increase to the staff should have come from a gentleman who at nearly eighty years of age retains the post of surgeon to the hospital. It was alleged, as one reason why no change should be made, that other hospitals intercepted numerous cases, that accidents were fewer, and that the area of the work of the hospital was contracting. The statement does not, however, tell wholly in favour of a standstill policy. The Mayor stated that he could not get rid of his out-patient tickets for the hospital, while those for the dispensary were much sought after. We cannot help thinking that if the two assertions are put together their joint significance is not in favour of the *status quo*.

THE COLLEGE OF PHYSICIANS AND THE SCIENCE OF CHEMISTRY.

IT will be generally admitted by the examiners of the various licensing bodies that the science of chemistry is not cultivated by students of medicine with the same diligence that is employed in the acquisition of the other branches of knowledge which go to form the medical curriculum. The importance of the subject in these days can scarcely be overrated, and demands close and earnest study, whereas at the medical schools chemical lectures and demonstrations are, as a rule, attended in a perfunctory manner, the student seldom seeking more than a superficial acquaintance with some of the more prominent facts in the science. The Royal College of Physicians has felt it to be its duty to call attention to the marked deficiency exhibited in the subject by students under examination, and has forwarded a copy of the following extract from the annual Report of the Examiners for the College licence, 1876, to all the medical schools:—

"The Examiners feel it to be their duty to inform the College that candidates for its licence present themselves for the Pass Examination very imperfectly prepared, as a rule, on the subject of Chemistry in its applications to pharmacy, pathology, and toxicology; and some have been

rejected on account of their ignorance of this subject whose attainments in other respects were satisfactory. The Examiners venture to suggest, that the College might with advantage take some step to make generally known to students at the several medical schools the imperative necessity for candidates for the College licence, in order to avoid disgrace and disappointment, to present themselves as well prepared on the subject of Chemistry in its applications to pharmacy, pathology, and toxicology, as on the other subjects of the Pass Examination."

We have no doubt that speedy action will follow the receipt of this circular. It was greatly needed, and will, we trust, be productive of much good.

THE OPIUM MONOPOLY.

THE deputation from the Society for the Suppression of the Opium Trade which waited upon Lord Salisbury a few days ago had at least the satisfaction of hearing that their views on the subject of the Bengal monopoly meet with complete acquiescence in the highest quarters. We have always maintained the justice of the position that the Government should derive no direct profit from the cultivation and sale of opium. The taxation of opium in some form appears essential to the Indian revenues, but cultivation of opium by the Government, to render the revenue a little surer and a little more easily collected, affords direct support and encouragement to the use of opium in order to avoid a little trouble and risk in the collection of the revenue. A simple export duty, leaving the private production of opium unfettered by direct control, as in other parts of India, would answer probably nearly as well. At any rate, even a loss should be faced rather than the present system maintained. We fail to see, with some writers on the subject, that there is no difference between growing opium for exportation and allowing it to be grown. It is probably impossible to stop its production, but, at any rate, let us wash our hands of the direct interest we have in its growth, and derive the necessary revenue from a duty which shall be in its tendency prohibitory. Of the profoundly deleterious influence of excessive opium-eating there can be no reasonable doubt. Of the frequency with which it is used in excess unbiased accounts leave no room for question. The Eastern nations probably owe much of their enervated vitality to the drug, and it behoves a nation which prides itself on its place in civilisation to make every possible effort to lessen the habit. Reckless statements are made in support of the present system. That opium grown in China causes skin diseases, as Lord Salisbury maintained, is a very good reason for supplying the Chinese with opium which shall not cause skin diseases, if our object is to encourage the habit of opium-eating. The Indian Government may be "doing the Chinese consumer a service by enabling him to suffer with a clean skin," but it is certainly doing the Chinese nation no service to remove one very obvious drawback to the agreeable influences of opium.

DEATH FROM A DAMSON-STONE.

AN inquest was lately held at Faversham on the body of a child whose death has excited, very naturally, much local comment. The child swallowed a damson-stone, which lodged in the air-passage, and produced fatal asphyxia. The question agitated was the common one, Was all done that was possible to save the child's life, and was all that was done wise and right? The father ran in haste to a surgeon, whose assistant told him at once to thrust a candle down the throat. This extemporised bougie was duly used, but without effect. The surgeon, Mr. Garraway, on his arrival, passed a probang into the stomach, also without result. An emetic was then given, and vomiting produced, in the hope that the foreign body might be thus expelled from the air-passage. That failing, the child was turned head downwards, and struck on the back, but without result. The question of tracheotomy was then debated between two of the surgeons, and it was decided that, as the operation was a dangerous one, and as the child was not then growing worse, she should be sent to the Canterbury Hospital, distant several miles. The child was sent by a "village cart," but before she had well started she died. The details of the post-mortem examination are not given, but from the statement by Mr. Garraway, that "on cutting down the windpipe a damson-stone was found completely stopping up the passage," and that he was of opinion that "if the operation had been attempted the child would have died," it is to be presumed that the foreign body had passed the larynx and lodged in the trachea. Under the circumstances, we think that the treatment is open to little criticism. To clear the fauces and pharynx, to induce vomiting, to invert the patient, are all proper proceedings. Had there been evidence that the damson-stone was in the larynx, tracheotomy ought certainly to have been done without unnecessary delay. With evidence that the stone had passed into the trachea, tracheotomy and an attempt to dislodge and remove the stone would have been the most promising measure; but the operation would have been, under the circumstances, one of much difficulty, and the arrest in the urgency of the symptoms was justification for the delay incurred in her removal to a hospital where the operation would have a better chance of success. To thrust a candle down the throat may seem a useless and somewhat barbarous measure, but it is to be remembered that when a child is said to have "got something in its throat," the most likely condition is an obstructing mass in the fauces, and to dislodge that a tallow candle is an instrument with which, at least, very little harm could be done.

A LESSON IN DOMESTIC CHEMISTRY.

IN connexion with the prevalence of disease in the Province of Oude, the Sanitary Commissioner makes some remarks in his report which have a practical and significant bearing upon other places nearer home. In regard to all old towns of any size, he observes that the same process of pollution of the soil, in the absence of any proper system of scavengering, which has filled the earth with chemical salts derived from organic matter, and made the water brackish, had already taken place in all the large cities in northern India—for example, Agra, Delhi, Benares, and Lucknow. So saline is the earth of these towns that many of them are the seat of saltpetre factories, and the nitre in every instance is associated with common salt. These salts are dissolved out of the earth by filtration and concentrated by boiling. With regard to the well-known chemical process by which animal matter is transformed into these salts, the description given in Abel and Bloxam's Chemistry would exactly apply to the conditions operating in these places, with the exception that what is done in Europe for commercial purposes, in India naturally follows a favourable combination of soil and climate with people of certain habits. If in every large village in Oude the nitre already in the soil could be turned into revenue, the additional object of purifying the soil and rendering the water drinkable would be attained. Tobacco is generally cultivated in Oude on soil containing the salts, and is watered with the brackish water, and thus they are in part removed. And it may be observed (as the people are well aware, although they do not know the reason) that this brackish water is never found in the fields, but always in the part of the towns or in suburbs that have at some previous periods been densely peopled. This easily observable process in what may be called domestic chemistry, the Commissioner

thinks, might well form a page of one of the educational treatises, with the view of bringing home to the senses of the people the connexion between proper removal of refuse and a pure water-supply.

THE MODE OF DISTRIBUTION OF THE NERVE-FIBRES IN THE OPTIC NERVES AND IN THE RETINA.

M. NICATI, examining microscopically the optic nerves of mammals (man, dog, cat, rabbit) finds that the fasciculi of fibres, and the fibres contained in the fasciculi, remain parallel to one another, and do not decussate. Examination of the eyes of various birds showed that the optic nerve remains cylindrical up to the globe, but then becomes flattened, resembling a tube crushed at its extremity, and thus forming a straight and elongated papilla from the middle of which the pecten springs. The fasciculi forming the nerve arrange themselves as they traverse the sclerotic in a rectilinear series, and pass alternately inwards and outwards. In batrachia and pisces the optic papilla, as in birds, is linear and vertical; the nerve, as in birds, losing the cylindrical form it possessed in the passage through the orbit, and becoming flattened as it traverses the sclerotic. M. Nicati remarks, in passing, that the presence of an arteria centralis retinæ, and corresponding venula, is limited to the eyes of mammals. As regards the distribution of the fibres in the retina of the frog, M. Nicati finds that from either side of the elongated papilla about a dozen fasciculi emanate; these spread themselves out upon the retina, dividing and subdividing, so as to form a series of triangles, the apices of which are at the papilla, whilst the bases are at the ora serrata. In each triangle the direction of the fibres is perfectly rectilinear. In the retina of man the fasciculi anastomose, leaving lozenge-shaped interspaces between them. Their direction is radiated and rectilinear in the internal half. In the external half some fibres, forming a very thin layer, pass directly to the macula; the fibres above and below these form a series of concentric circles around the macula, the external ones forming such gentle curves as to run in a radiated direction to the ora. These last fibres are thicker than the rest.

THE LONDON HOSPITAL.

THE new wing of the London Hospital will be opened in due form by Her Majesty on Tuesday, the 7th inst., and will add very considerably to the usefulness of this admirable institution, both as a hospital and a medical school. On the 24th of last month there were 641 patients in the old building—a greater number, as we are informed, than (with two exceptions) was ever resident in any metropolitan hospital. The Grocers' Company have liberally subscribed £20,000 of the £100,000 required for the new wing, which will provide 200 additional beds, and so make this establishment the largest of its kind in London. THE LANCET of November 14th, 1874, contains a description of this new wing, and, having visited it during the past week, it is satisfactory to know that all the wards are fast approaching completion. They will accommodate forty-five cots for children, sixty-five for female medical cases, and the same number for male cases. The basement is occupied by the housekeeper's rooms, several small wards for special cases, and a coroner's and witnesses' rooms, which latter have been in use for some months. The attic storey is devoted to the nurses, and will accommodate forty-five, giving each a superficial area of about 112 feet. A great deal of pains appears to have been bestowed on the warming and ventilating arrangements, and it will be interesting to know if some novel appliances connected therewith perform their duty well.

HEALTHY WORKSHOPS FOR TAILORS AND DRESSMAKERS.

IN our recent report on the "home-work" and "sweating" systems, we pointed out the fearful risk, and, indeed, absolute certainty, that infectious disease is spread by the unclean and often infected dens in which clothes are commonly made. We suggested that the evil might be met by bringing all homes in which clothes are made for sale under the provisions of the Workshops Regulation Act. A much simpler remedy has now been suggested, and we are glad to give it our cordial approbation. It is proposed to establish public workshops in various parts of the metropolis, properly built, warmed, and ventilated, in which, for a small payment, needlework may be carried on. Every convenience would, of course, be provided, each establishment would be under the control of the Act, and proper medical supervision could be ensured. Such establishments would be of immense benefit both to the workpeople and the public. To many of the former they would indeed bring a new lease of life, and the latter would be secured from the frightful dangers to which we have drawn attention. We trust the experiment will be tried without delay, and that the Government will assist by imposing stringent sanitary conditions on home-work. The evil will then soon be stamped out.

SHIPS' SURGEONS.

SOME ten days ago was posted in the letter cage of the Marischal College, Aberdeen, the following notice:—"Seal Fishing.—Wanted immediately, a surgeon for the S.S. *Masinthien*, sailing from Peterhead on Thursday or Friday next (24th or 25th). A junior student not objected to. Must be a good shot." The remuneration usually offered for these voyages is at the rate of £2 per month, and a small commission on the proceeds of the voyage. We commend this interesting notice to the attention of the Marine Department of the Board of Trade, and suggest that, although it may be very much to the advantage of an owner of whale ships that a good surgeon should be also a good shot, it is still more important that the official circular addressed to emigration officers and superintendents of mercantile marine offices, dated October, 1875, should be strictly complied with. This circular reminds those concerned that all ship-surgeons are compelled by law to be registered medical practitioners, and it is astonishing to us that under these circumstances shipowners and shipmasters are permitted by the University authorities at Aberdeen to put up such an advertisement in their hall.

THE PORTSEA ISLAND GUARDIANS AND THEIR MEDICAL OFFICERS.

THE local papers might now with advantage leave the case of Matilda Angel and her medical advisers. We sympathise with Dr. Williams in regard to the injury he sustained by the newspapers reporting Mr. Howell to have said that the instruments used in the delivery were improper. Mr. Howell entirely repudiates such language, and confesses himself, as we should expect him to be, no judge of the instruments to be used in a case of puerperal convulsions. Dr. Williams was acting quite in accordance with the best obstetric principles in delivering as soon as possible with forceps, and, by so doing, doubtless did the best for the woman. We are still not convinced that he was justified in blaming the other medical officers for sending her into the house. Dr. Stickland is prepared on oath to say that labour had not commenced. Some hours after, when Dr. Williams saw her, labour was only just commencing. Under these circumstances, and the house of Mrs. Angel being

altogether unsatisfactory, Dr. Stickland and Dr. Morley might very naturally think that removal to the workhouse infirmary was the best course. Even if they erred, it was a simple error of judgment which should have had no condemnation from a medical brother.

SANITARY DANGERS FROM PAWNBROKING.

AN outbreak of typhus in Leeds has been most clearly traced to a bundle of clothes pledged with a pawnbroker in that town. The clothes, it appears, were taken in pledge by a pawnbroker's assistant from a family in which fever had prevailed. The assistant was very shortly after attacked by typhus, and the disease spread first to the pawnbroker's son, and then to his wife, who nursed the son. The assistant and the pawnbroker's wife have both died from the disease; the son is said to be in a fair way of recovery. This is clearly a case in which the Leeds sanitary authority should institute a prosecution, under section 126 of the Public Health Act of 1875, against the person who offered these infectious clothes as a pledge, thus exposing the pawnbroker's assistant and others to infection. A prosecution of this kind is invaluable as a means of educating the poor on the importance of sanitary questions, and as a warning against such wilful ignorance, far beyond the satisfaction to be derived from punishing the guilty person in the particular case in point.

UPPINGHAM SCHOOL.

LAST week we hesitated to give publicity to an alarming report of the re-appearance of enteric fever in Uppingham School. We have since made inquiries into the matter, and find the following to be the facts:—The school was re-opened by the trustees on January 28th, after all the houses had been put in perfect sanitary order under official instruction and superintendence, and the Local Government Board authorised the trustees to call together the school. On Monday, February 21st, a case of typhoid declared itself in one of the school houses in the town. The governing body immediately disbanded that house temporarily, and no other case has occurred since. But unfortunately they cannot isolate their houses; the majority of them do not stand by themselves. All the houses of the school have been again inspected, but the friends of the institution have petitioned the Local Government Board to take the whole matter in hand. We understand that there is a case or two of enteric fever in the town itself.

LIME-JUICE AND LEMON-JUICE.

THE annual report of the Principal of the Laboratory attached to the Inland Revenue at Somerset House shows that an unusual number of samples of lime-juice and lemon-juice have been examined for mercantile marine use during the past year. It appears that there has been lately a great scarcity of lemon-juice of sufficiently good quality for anti-scorbutic purposes afloat, so that large quantities of foreign-squeezed lime-juice and lemon-juice were presented for examination, a considerable portion of which was rejected as below the standard required. This foreign-squeezed juice frequently contains common salt, and is, according to Mr. Bell, the principal of the laboratory, often diluted with water. During the past year 22·8 per cent. of foreign-squeezed, and 12·6 per cent. of home-squeezed, juice was rejected by the Department, the quantity of juice thus thrown out of the market amounting to a total of 23,325 gallons. It is satisfactory, however, to know that no member of the trade has questioned the decision of the official analysts, and so we may still continue to record with certainty that bad lime-juice does not constitute a factor in the sudden and very discreditable increase of scurvy that has lately occurred in the merchant ships of this country.

THE GUILDFORD HOSPITAL.

THE annual meeting of the supporters of the Royal Surrey County Hospital was held last week at the institution, and was numerously attended. We regret to learn from the report which was read that the financial state of the hospital is by no means as satisfactory as could be desired. The committee had not only to report that the income was less, but that the expenditure was greater during the past year, although every economy consistent with the due requirements of the patients was exercised. In such an opulent county as Surrey there ought to be no difficulty in obtaining adequate support for this excellent hospital. Its claims for sustentation should be pressed on the attention of the wealthier inhabitants by all its friends, and especially by the clergy of the diocese. During the course of the meeting, a proposal that the Earl of Onslow be requested to accept the office of vice-president was carried. His lordship has from the first been a generous supporter of the hospital, and it is to be hoped that he will further increase the obligation by becoming its vice-president. Under such auspices it could not fail to derive new life and strength.

DEATH FROM SEPTIC INOCULATION.

THE danger of inoculation with the products of gangrenous inflammation ought to be more generally known, and to ensure great caution. Members of our own profession are frequent sufferers from that source, sometimes by unavoidable accident, sometimes through carelessness. All who have to do with the dead are exposed to the same risk, although usually in slighter degree. A woman has just died in the Isle of Man from such inoculation. She was called to lay out the body of a person who had died of gangrenous erysipelas of the arm, the result of a cut. The woman, having pricked her finger with a thorn, hesitated, but ultimately undertook the duty. Subsequently she showed symptoms of blood-poisoning, which ended in her death. Those who have to attend such cases cannot be too careful to avoid exposing an unprotected abrasion to contact with the body.

AT the annual meeting of the governors of the Huntingdon County Hospital, held last week, under the presidency of the Earl of Sandwich, it was stated that the unwearied exertions of the medical officers, the matron, and the whole staff of the hospital to meet the pressure caused by the Abbot's Ripton collision, have been gratefully acknowledged by the sufferers themselves, their friends, the coroner's jury, and the directors of the Great Northern Railway Company. Donations were announced from the Messrs. Calder and Kellie, £50; Mr. Dion Boucicault, £25; Lord Colville, £25; Mr. M. Noble, £5 5s.; Mr. M. A. C. Foster, the Town Clerk of Halifax, £1; fees presented by the coroner's jury, £3 9s.

IN London last week 1691 deaths were registered, giving an annual rate of mortality of 25 per 1000. The deaths included 2 from small-pox, 44 from measles, 47 from scarlet fever, 2 from diphtheria, 88 from whooping-cough, 15 from different forms of fever, 17 from diarrhœa, and 458 referred to diseases of the respiratory organs. Of the 1691 deaths registered the cause was certified by registered practitioners in 1532 cases, inquests were held in 133, while in the remaining 26 cases, the deceased died either without any medical attendance or were attended by unqualified men. In the Outer Ring three deaths from enteric fever were returned in Croydon.

AT the last Quarterly Court of the Governors of the Hospital for Consumption and Diseases of the Chest, Brompton, the following bequests were announced:—The Countess Beauchamp, £100, duty free; Mr. Wynn Ellis, £2000, duty free; Miss Margaret A. Davis, £100, duty free; Mr. W. Bishop, £1000; Mr. J. Bowman, one-third of £5000 Consols, reversionary; Mr. H. Moses, £100; Miss Elizabeth M. Saunders, one-sixth of residue; Mrs. Griffith, £200, duty free, reversionary; Mr. F. A. Schroeter, £100. The windfalls which the excellent institution at Brompton has received of late must have excited the envy of the governing bodies of some of the other medical charities in the metropolis, who often find a difficulty in making both ends meet. Without counting the stream of benefactions which flow towards its support, the large sum of £100,000 which it received in one lump not long ago has placed it beyond the reach of anxiety for the future.

DR. TAAFFE, medical officer of health for Brighton, in a summary of the sanitary measures carried out in the town in the last quarter, has again to report that a special house-to-house inspection showed that in a great number of houses the interiors were connected directly or indirectly with the drains and sewers. Of 1291 residences visited during the quarter it was found that in 123 the house and closet were supplied from the same cistern or water-supply. The inspection was chiefly in the northern part of the town and in second and third class streets. We observe that no death from measles or small-pox was recorded in the period. Taking the population, including visitors, at 131,000, there was an average death-rate of 15·5 per thousand from all causes in the town.

IT is with regret that we report another instance of the somewhat alarming condition of our mercantile marine at the present time with regard to scurvy. On Saturday last the *Westridge*, a Liverpool ship, arrived in the Thames from Calcutta, with ten sailors—about one-third of the crew—in a helpless state. The men were at once removed to the Seamen's Hospital at Greenwich, where they are now under treatment. These all present very well-marked symptoms of scurvy, and though they seem to have been exceptionally healthy and vigorous men at the time that the ship sailed from India, the affection has prevailed amongst this crew with more than usual severity. Into this outbreak, as into several recent cases, official inquiry will, no doubt, be made.

WE may congratulate Sir Joseph Fayrer on his narrow escape while taking part in an elephant hunt which Sir Jung Bahadoor had provided for the amusement of His Royal Highness the Prince of Wales and his party. It appears that, while at full speed, Sir Joseph Fayrer's horse leaped into an old elephant pit, some ten feet deep, but, strange to say, neither the horse nor its rider was injured. Sir Joseph was well known as a keen sportsman during his career in India, and his participation in the various expeditions, besides being uncommonly pleasant, must have seemed like a renewal of life to him. The Prince, it is expected, will leave Bombay about the 10th instant, and the Indian tour is, consequently, fast drawing to its close.

WE are informed that the Duke of Richmond, Lord President of the Council, and Mr. Sclater-Booth, President of the Local Government Board, have appointed Thursday, March 9th, at 3 P.M., to receive conjointly a deputation, consisting of members of the Obstetrical Society and others, relative to the instruction and registration of midwives. The deputation will assemble at the Privy Council Office at 2.30.

THE last Weekly Return of the Registrar-General contains the record of two more deaths from fever at Ponder's-end, in the parish of Enfield; in the week ending 5th of February three deaths were referred to fever in the same locality. The cause of death in these five cases was certified as typhoid or gastric fever. The population of the parish and local board district of Enfield showed a large increase between 1861 and 1871, partly due, according to the Census report, to the employment of a large number of persons in the jute factory at Ponder's-end. The local board of Enfield, acting as the urban sanitary authority, appears to have appointed the local Poor-law medical officer as their medical officer of health, who does not receive any salary, but is remunerated by "two guineas for each report." Such is the sham sanitation which retards sanitary progress in so many rural districts. It would be interesting to know whether the medical officer of health for Enfield has been called upon to furnish a report upon the present outbreak of enteric fever at Ponder's-end.

AT a meeting of the representatives of combined Rural Sanitary Authorities held at Barnstaple recently, under the presidency of Lord Fortescue, the Committee expressed their conviction that the present combined district might with advantage be further enlarged, and requested their chairman to communicate with the Rural Sanitary Authorities of Barnstaple, Crediton, and Tavistock, and to ascertain whether all or any such authorities would be willing to join the present combination of rural sanitary authorities. The Committee also recorded their further conviction that it would be very desirable on the ground of efficiency and economy that the smaller urban sanitary authorities situated within their districts should also be included within the scope of their action.

CHARING-CROSS HOSPITAL will be closed from the 15th of March till the 1st of May, for the purpose of making extensive alterations in the building, which, when completed, will greatly increase the capacity of the hospital. No patients can be received during the period named, nor can any patients be received after the present date except such cases as can be relieved by the 15th of March. On the 1st of May 30 beds will be opened for the reception of accidents and urgent cases. On the 1st of June about 75 more beds will be opened for general cases, including a ward for children, and it is expected that in October the number of beds will be increased to 200. We trust that the appeal of the council for funds will meet with a liberal response.

IN the list of presentations at the Levée held on Tuesday last at St. James's Palace we observe the name of Mr. Arnold Royle, M.R.C.S., late Royal Artillery, "on appointment as surgeon to his Royal Highness Prince Leopold." Mr. Royle was presented by the Lord Chamberlain.

MIDWIVES ABROAD.

AMONGST recent Parliamentary papers, not the least interesting is one consisting of returns from Her Majesty's representatives abroad on laws and regulations with reference to midwives, in answer to a request from Lord Derby for such information for the House of Commons, which request was conveyed to Her Majesty's representatives in a circular from the Foreign Office bearing date April 22nd, 1875. We subjoin abstracts of the returns from the principal countries.

In Austria it is the duty of the supreme educational authorities to provide instruction for midwives, and the expense of this instruction is chiefly borne by the State.

In Cisleithamia this instruction is given in the medical and clinical departments of the universities at Vienna, Prague, &c.; in the medico-chirurgical schools at Salzburg, Olmutz, &c.; and, finally, in the independent schools for midwifery at Linz, Laibach, Klagenfurt, and Czernowitz, by professors specially named by the Emperor, with the aid of assistants and one or more midwives. Not only are the teachers paid, but considerable sums are expended by the State in aid of the students of midwifery under the heading of stipends, travelling expenses, &c. In order to encourage women in the country to study midwifery, stipends and support are also granted from the provincial and communal funds, on condition that the candidates shall, after obtaining their certificates, establish themselves as midwives at fixed places. The instruction given is both theoretical and practical, lasting five months, and includes lectures on anatomy of the human body, especially of the pelvis and the parts of generation, on pregnancy, on lying-in in its normal forms, and on abnormal forms of pregnancy and parturition. Each student has to manage a great number of births in the presence of the professor or his assistants. They are shown the cases in which a midwife should send for a medical man. In Austria midwives are never allowed to undertake instrumental operations, and manual operations are only allowed in extreme cases, and where no medical man is at hand. After completing the course of study, the students are examined in a preliminary manner by the professor, and then they pass a strict examination in the presence of a commission appointed by the Government. If the examination is passed, a certificate and an official authorisation to practise in a given place is granted. By later orders, midwives possessing diplomas are not restricted in their place of practice, unless they have been examined gratis and have had other assistance, in which case they must submit to practise beyond the capital of the province. In the capital there is always an excess of midwives, and in the country a dearth. Duly authorised midwives are protected from competition on the part of unauthorised ones. Midwives are under the juriediction of the political authorities in the first instance, and of the official doctors of the same. They are under very strict injunctions as to propriety of life and conduct, and as to the management of the women and children under their care. They have to report every birth to the registrar within twenty-four hours. Severe penalties are attached to any who procure abortion or fail to give notice to the authorities of suspicion of crime or misdemeanour. Single women were formerly excluded, but are now admitted if they have reached the age of twenty-four. The maximum age for midwife students is forty-five.

In France, the regulations respecting the profession of midwives form part of the laws and decrees that govern the practice of medicine and pharmacy. In each of the three great schools, called Faculties of Medicine in Paris, Montpelier, and Nancy respectively, courses of lectures on Midwifery, intended for women who wish to become midwives, are held gratis. They must, before admission, produce certificates of ability to read and write, of respectability, and of being not less than eighteen or more than thirty-five. After a year's study, theoretical and practical, an examination has to be passed before a jury composed of Professors of the Faculty of Medicine, whereupon a diploma is granted. The lectures are free, but the examinations cost 130 francs. The Minister of Public Instruction may, however, remit the payment of these fees in the case of students who cannot afford to pay them. Midwives possessing a diploma from a Faculty of Medicine form a body called "Midwives of the First Class." There is, however, in France another order of midwives called Midwives of the Second Class, who have obtained instruction at a hospital of the Department in which they live. They must comply with similar conditions to those regulating midwives of the first class. "They must not only have attended a course of instruction, but have either seen midwifery practised for nine months, or have practised it themselves for six months either in a hospital or under the superintendence of a professor." But they are licensed to practise only in the department in which they have studied. Women may not use instruments without calling in the assistance of a medical man. Twenty-five years ago an attempt was made to compel women to consult a medical man before giving ergot, but by the advice of the most eminent medical men it was abandoned. Women practising without a diploma are liable to a fine of 100 francs, and for a second offence to imprisonment. Should authorised midwives attend other cases than those of midwifery, or practise the science of healing, they may be prosecuted for illegally practising medicine. M. Treitt, the legal adviser to Her Majesty's Embassy in Paris, says, at the close of his clear letter to Lord Derby—"At the present time medical men attend a great many more deliveries than formerly, and are gradually taking the place of midwives in towns." Though the institution of midwives in towns presents some dangers, they are of great use in country districts, where medical men are not sufficiently numerous.

In Prussia midwives are divided into two classes—(1) those attached to some special district; and (2) those free to practise anywhere. Both classes, to qualify themselves for examination, must have been educated in a Prussian midwifery educational institution, or, with the consent of the Government, in a foreign institution. The whole kingdom is divided, for midwifery purposes, into twenty-two districts, in each of which there is an educational establishment for midwives. Most of these are at present subject to the State, but the Government intends handing over the direction of all such institutions to the provincial and communal administrations. Until 1875, these institutions were supported, not unfitly, by fees levied at marriages and baptisms. Henceforth they have to be supported out of local rates. The institutions are also authorised to demand payments from pupils. District midwives pay 135 marks, about £6 15s., which sum is provided by the parishes to which they owe their nomination. In certain districts in Westphalia the women inhabitants elect the midwifery candidates. The unattached midwives pay from £12 to £15 out of their own pockets. Examinations and registrations are gratuitous. Instruction is given in all the institutions, according to the "Manual of Midwifery for the Midwives in the Prussian States," of which a new edition was ordered in 1866, by von Muhler, Minister for Ecclesiastical, Educational, and Medical Affairs. Respectability of character is regarded as a most indispensable qualification in candidates for admission. A service oath is taken, according to form, by district midwives. Free practising midwives—i.e., midwives who have been educated on their own application and at their own expense, and are not subject to any restriction of place of practice—are not sworn in. District midwives charge according to a tariff fixed by the Government. Unattached midwives fix their own charges. District midwives have a sustentation grant from Government, which is especially needful to alleviate the frequently extreme poverty of the midwives in the poorer parts of the State.

In Russia there are two classes of midwives—one trained with the object of supplying perfectly competent and skilful midwives for towns, while the other is instructed only in the most elementary and practical knowledge of midwifery with the view of village practice. Students of the first class have to pass a preliminary examination testing their knowledge of the history of the old and new Testaments in a condensed form, their ability to read and write the Russian language without great grammatical faults, and their knowledge of the four rules of arithmetic with their application to abstract and complex numbers. Students of the second class are admitted into the midwifery schools on displaying proper intelligence. Those who can read and write are received in preference to the illiterate. Students of the second class are principally of the agricultural order, sent by rural boards, village communities, or private individuals who enter into arrangements with the authorities of the midwifery schools. After a course of midwifery they return to their villages for the purpose of practising their calling. Pupils of the highest class have two years of instruction—the one of theoretical, the other of practical instruction, particulars of which are given in the despatches to Lord Derby. Midwives are not allowed to operate. So lately as 1870 a second lecturer was appointed to the School for the Training of Midwives in connexion with the St. Petersburg Kalinkin Hospital, with a yearly salary of 1200 roubles, for the instruction of midwives in the diseases of women and children, especially in determining and curing venereal diseases in them. Later still, in 1874, his Imperial Majesty the Emperor has ordered the appointment of a third lecturer for the instruction of midwives in skin

diseases, laryngoscopy, and rhinoscopy. They are allowed to treat these diseases in the absence of medical men. There are three midwifery institutions—two in St. Petersburg and one in Moscow. Besides these, midwives are trained in the Medico-Chirurgical Academy of St. Petersburg, and in the provincial universities, which possess clinical midwifery wards. In the provincial towns there are small practical schools for midwives attached to the town hospitals.

We must pass cursorily over the regulations of other States. The United States has no central legislation on this subject. In Belgium, the Netherlands, and Sweden and Norway provision is made for the instruction of midwives, of which ample and interesting particulars are given in the despatches. The instruction is generally gratuitous. In Sweden and Norway midwives who have passed an examination in instrumental obstetrics are allowed to use instruments when a medical man cannot be procured, and the case is extreme. The tariff for midwives in Sweden and Norway is not tempting. It is as follows:—"Midwives shall be entitled to receive from every person employing their assistance the following payment: for attending the wife of a landholder, 64 skillings (2*s.* 4½*d.*); the wife of a householder, 32 skillings (about 1*s.* 2½*d.*); and the wife of an undertenant, 16 skillings (about 7*d.*)." From other pregnant women in the county and in the market towns, 64 skillings, or 32 skillings, according as the woman ranks nearest the class of landholders' or householders' wives. Any woman in Norway or Sweden may render obstetric assistance, but with liability to fine or imprisonment if she acts in dangerous cases or does any harm.

THE BRITISH MEDICAL ASSOCIATION AND THE PROFESSION AT BRIGHTON.

A SPECIAL meeting of the Committee of Council of the British Medical Association, was held at the office of the Association, 36, Great Queen-street, London, on Tuesday, the 29th of February, 1876, to consider certain resolutions passed at a meeting of the profession at Brighton on Tuesday, the 22nd ultimo. It was resolved,—"That as the next annual meeting of the Association must, by the laws, be held in Brighton, and it would now be impossible to arrange for a successful meeting in any other locality, the Committee of the Council, whilst regretting the course adopted by certain members of the profession in Brighton, still believe that a successful meeting will be held there, and will gladly receive the co-operation of those members of the profession in Brighton who are ready to assist in making the required arrangements for the annual meeting."

Correspondence.

"Audi alteram partem."

THE DENTAL PROFESSION AND THE ODONTOLOGICAL SOCIETY.

To the Editor of THE LANCET.

SIR,—In your annotations of last week you refer to the Association of Surgeons practising dentistry, which is being organised, and in doing so make some remarks about the Odontological Society of Great Britain.

As Honorary Secretary to the Odontological Society, I beg the privilege of correcting some erroneous impressions likely to be received from the article in question.

Although the Odontological Society is not avowedly a political society, yet it would not be out of precedent were it to take action in political matters at any time. True its members represent "many different interests and diverse sympathies," but these interests and sympathies are, fortunately or unfortunately, as the case may be, intimately bound up with the dental profession. Thus, although the Odontological Society not only claims but really is a scientific society, it is also a thoroughly representative body. This much can hardly be said of the embryo Association, which has not yet a habitation or a name, and which seems to need dry nursing at the expense of an old and respected institution.

The majority of the members of the Odontological Society are willing to follow the laws, written and unwritten, of the medical profession in their professional conduct; but that the Society takes cognisance of the ethics of the profession is well known to every one who has taken part in the business of the Council meetings, and if any gentlemen have any ideas to suggest, they will receive the most careful attention.

That the laws for the admission of members are lax I cannot for a moment admit. That the laws directing the expulsion of members are too lenient, I think might be urged with more force. In either instance it is competent for any member to take action in the matter, and have the laws altered, so that the lax laws of the Odontological Society can hardly be made a *raison d'être* for the existence of the new Association.

It is within my knowledge that nearly all the gentlemen who take an interest in this new Association are members of the Odontological Society. It is therefore within their power to act towards its laws as I have indicated; but whether they do so or not I must protest against the Odontological Society being dragged into this discussion, and against its laws being criticised by a side wind, in order to give a colourable support to any movement whatever.

I remain, Sir, yours obediently,

JAMES SMITH TURNER, M.R.C.S. & L.D.S.,
Dental Surgeon to the Middlesex Hospital,
Lecturer on Dental Mechanics, London School of Dental Surgery.

*** We have much pleasure in publishing Mr. Turner's letter. Mr. Turner denies that the laws regulating admission into the Odontological Society are lax. Surely the contention cannot be seriously maintained. Is it not a fact that dentists are admitted into it who possess no qualification whatever? Mr. Turner virtually confesses that there is no adequate provision for getting rid of obnoxious members. We wish the Society every success in its legitimate sphere, and cannot see that its interests are imperilled by the formation of the Association to which we referred last week. The discussion which has taken place on the subject will, we hope, be productive of much good to the dental profession.—ED. L.

THE LATE J. WARBURTON BEGBIE, M.D.

To the Editor of THE LANCET.

SIR,—I am instructed by the committee of the British Medical Benevolent Fund to request the favour of your kind insertion of the accompanying letter from the late Dr. Warburton Begbie, which was read at their meeting of yesterday.

Feeling assured of the universal sympathy which the loss of so generous and distinguished a supporter of all that is good and great in our profession cannot fail to command, the committee are persuaded that you will not deem the publication of a note so illustrative of his character and disposition to the latest inopportune—whether as an additional testimony to the sterling worth of the writer, or as an evidence of his appreciation of the institution of which he was so constant a friend and advocate.

I am, Sir, yours faithfully,

C. S. WEBBER, Hon. Sec. (Finance.)

Abbey-road, St. John's-wood, March 1st, 1876.

[Copy.]

Edinburgh, December 23rd, 1875.

MY DEAR SIR,—I appreciate very highly the courtesy you have exhibited in your kind note of the 16th regarding the selection of annuitants under the "special fund" of the British Medical Benevolent Fund. Living, as I do, remote from the actual sphere of your operations, and having the utmost confidence in the Committee who manage the Fund, I prefer not to avail myself of the opportunity you have kindly given me.

A few weeks ago my annual contribution was paid to our excellent local Secretary, Dr. Joseph Bell, but the approach of Christmas now leads me to send you a donation of one hundred guineas to the Special Annuitant Fund.

So long as life and health are given me, I mean, keeping in mind the real community of our professional interest, so strikingly set forth in the oath, ΟΡΚΟΣ, of Hippocrates, to act in this way.

I do not know any better way of benefiting the families of medical men than by subscribing as liberally as Providence allows to the noble fund for which you act.

Believe me, with best Christmas wishes,

My dear Sir, yours very sincerely,

Charles S. Webber, Esq., F.R.C.S. J. W. BEGBIE.

THE EDINBURGH COLLEGE OF PHYSICIANS AND THE TITLE OF "DOCTOR."

To the Editor of THE LANCET.

SIR,—In your issue of the 19th inst., Wm. Cumming F.R.C.P.E., states that the secretaries who have conducted the official correspondence of the Edinburgh College with the licentiates assure him that, in their communications with them, they have invariably avoided using the title of Doctor.

I beg to assure you that is not the case. Every two or three years I regularly receive a printed pamphlet representing all the Licentiates, Members, and Fellows of the College of Physicians, and the directions on the cover always run thus: Dr. So-and-So.

I may also state that I have received private letters from the Edinburgh College of Physicians in which I am always addressed "Dr."

Trusting you will allow the above to appear in a conspicuous place in your next publication, I enclose my card and am, Sir, your obedient servant,

Feb. 25th, 1876. A TEN YEARS' LICENTIATE.

BIRMINGHAM.

(From our own Correspondent.)

ONLY a few months have elapsed since the Corporation of Birmingham purchased the water works, and already a net profit has accrued of £3663. Fresh improvements in the supply and storage of water are necessary, and these matters will now receive attention. The Public Works Committee have decided on deepening, widening, and cleansing the river Rea, which runs through Birmingham, and on constructing certain storm-water outlets to prevent flooding of some of the low-lying districts of the town.

The Coroner has recently called attention to the necessity for there being one or more public mortuaries, and also some central building in which the coroner's court could be held. This subject was brought before the Town Council some years ago, and ably advocated by Councillor Dr. Barrett, but the proposition was not entertained. Perhaps now that the coroner, who was himself but recently an alderman, has urged the matter on, some notice will be taken of it by the Council. There can be no doubt as to the importance and value of public mortuaries in cases of suicide or sudden death from accident; but they are even more urgently required in cases of death from zymotic disease occurring in houses where perhaps there are several families resident, and where, owing to deficient bedroom accommodation, the living and dead would be obliged to occupy the same apartment. In all such cases, on the certificate of any registered practitioner, the bodies of those who have died from zymotic disease should at once be removed by the sanitary authorities to the public mortuary, and all articles of clothing and bedding disinfected by the special apparatus on Ransome's principle, which has recently been put up at the public expense for that purpose.

The Bishop of Worcester presided at the ninety-sixth annual meeting of the General Hospital, when the report showed that during the past year there had been 2751 in-patients, of whom 934 were admitted by ticket, and 1817 without tickets. The sanitary changes effected during 1874 have produced salutary results and erysipelas has been almost unknown. The financial condition of the hospital was reported to be flourishing. The number of out-patients admitted by ticket was 9655; accidents and urgent cases, 12,056; total, 21,711. The cost of each out-patient was 3s. 2¼d., of each in-patient £3 2s. 2¼d., and the cost per bed £53 6s. 7d. Mr. Jaffray, J.P., in seconding the adoption of the report, strongly urged the governors to *let well alone*, and not to follow the example of the Queen's Hospital in adopting the free system, as, owing to the great number of accidents and urgent medical cases admitted without ticket, they had practically adopted the free system in regard to such cases. He also called attention to the fact that the use of stimulants had considerably decreased, and that statistics showed they were more economical in that respect than any other similar institution in the country.

The retirement of Mr. Thomas Taylor from the post of hon. sec. to the Medical Benevolent Society, which he has held since 1854, is to be marked by the presentation of a testimonial. His devotion to the interests of the Society has contributed mainly to its success, and no testimonial was ever better deserved.

Dr. B. W. Richardson, F.R.S., has been delivering two interesting lectures at the Midland Institute on "Work in relation to Health and Longevity." In the first lecture he treated of mental, and in the second of muscular work.

The Mayor and Corporation of Dudley have commenced proceedings against the South Staffordshire Waterworks Company for neglecting to provide a proper pressure of water whereby the highest storey in the houses in the borough could be supplied. The public require protection against these great companies, and municipal authorities do wisely in enforcing those laws which the water companies are eager enough to appeal to when their own interests are at stake.

The Midland Medical Society has, under the presidency of Dr. James Johnston, received a great accession of members, and its meetings have this session been largely attended. Mr. Edwin Chesshire has offered for competition a prize of five guineas, on the subject of Venesection, and a sub-committee has drawn up rules for the Society's clinical prizes.

A correspondence having taken place between the Mayor and Dr. Bell Fletcher, the chairman of the Clinical Board, as to the clinical education of women, a special meeting of the hospital staffs was held last Friday, when it was resolved that the Clinical Board is debarred from entertaining any proposition for the clinical education of students *separately* by Article 2 of the scheme for amalgamation of the clinical practices of the General and Queen's Hospitals, &c. How this resolution will affect the recent decision of the authorities of the Queen's Hospital as to the reception of female medical students for clinical instruction in their wards remains to be seen, but it is hardly likely that they will be coerced into withdrawing a privilege which they have, after much deliberation, decided to grant to intending aspirants for medical knowledge.

The annual general meeting of the Birmingham General Dispensary was held last week at the newly-opened Aston branch of the institution, under the presidency of the Mayor. The number of patients relieved during the year had been 16,396, showing an addition to those of the previous year of 1744. The Aston and Camp-hill branches were reported to be doing good service, and the funds were ample to meet all the requirements of the charity.

The wretched condition of the houses of the poorer classes in Dudley and Nesberton has been made prominent of late, through the reports of Drs. Thorne and Ballard, and the authorities have decided on appealing to the Earl of Dudley, who is the chief owner of property there, to assist them in remedying the painful and helpless condition to which they are at present reduced. The Town Council have condemned many of the dwellings as unsafe and unwholesome, and yet they are afraid to eject the tenants, because they cannot provide other homes for the people to inhabit.

Dr. Foster's case of thoracic aneurism, to which THE LANCET has already adverted, is much better. The result of the second application of two needles, connected with eight cells of Weiss's battery for forty-five minutes, is that there is now little or no prominence of the chest wall, the impulse is indistinct, and the tumour seems to be solidified. The operation will not be repeated unless fresh symptoms arise.

There are at present two interesting cases of empyema

at the Queen's Hospital, under Dr. Mackey, where good results have been obtained by the use of very large drainage-tubes (half an inch in diameter), and free syringing with carbolic solution by means of Higginson's syringe. He has also been using with good effect Volckmann's method of treating lupus by means of free puncture and scooping in a girl aged twenty-three, who had suffered with the disease for seven years, and for which the galvano-cautery had been employed by Mr. Bryant at Guy's Hospital without benefit.

Birmingham, February 29th, 1876.

NEW YORK.

(From our own Correspondent.)

AMONG the organisations for the centennial year, one of the most important is the Centennial Medical Commission. This Commission grew out of the action of the medical societies of Philadelphia, and has for its object the formation of an International Medical Congress. Arrangements have been made for the holding of the congress in the city of Philadelphia, to begin on the 4th, and to terminate on the 9th of September, 1876. The following is the general plan for the organisation and business of the congress. The congress shall consist of delegates, American and foreign, the former representing the American Medical Association and the State and territorial medical societies of the Union, the latter the principal medical societies of other countries. There will be nine sections, as follows:—1. Medicine, including pathology, pathological anatomy, and therapeutics. 2. Biology, including anatomy, histology, physiology, and therapeutics. 3. Surgery. 4. Dermatology and Syphilology. 5. Obstetrics and Diseases of Women and Children. 6. Chemistry, Toxicology, and Medical Jurisprudence. 7. Sanitary Science, including hygiene and medical statistics. 8. Ophthalmology and Otology. 9. Mental Diseases.

In order to impart to the congress a thoroughly international character, the Commission will send invitations to the prominent medical societies of Europe, Mexico, the British dominions, Central and South America, the Sandwich Islands, the East and West Indies, Australia, China, and Japan. Among the advantages arising from such a convocation as this, not the least important will be the opportunity afforded its members for the interchange of friendly greetings, the formation of new acquaintances, and the renewal and cementing of old friendships. The congress will be formally opened at noon on Monday, the 4th day of September, 1876. The Secretary of the Interior has also appointed a Commission to represent the progress of sanitary improvement in this country during the last century. The Sanitary Commission which did so much good work during the war will make an exhibition of its appliances.

January 25th, 1876.

Obituary.

JAMES WARBURTON BEGBIE, M.D., LL.D., F.R.S. EDIN., &c.

A MOST "beloved physician" has died in the midst of a career of very remarkable usefulness and success, and has too well justified the fears with which the state of his health had been regarded for some time past in Scotland. It would seem that for a good while Dr. Begbie, though only fifty years of age, has had indications of a weak condition of the heart. Since October last these indications had become more frequent and obvious, until rest became absolutely necessary. On the 9th of February he left Edinburgh with this purpose, for the south of England, and for the south of Europe if improvement in strength should after a time permit. By the time Carlisle was reached he was so fatigued that further removal from home was altogether impracticable. After three days' rest, he returned to Edinburgh suffering from great debility and irregular action of the heart, which neither rest nor treatment alleviated, and which proved fatal on the afternoon of the 25th inst. A post-mortem examination showed great enlargement of the heart, with thinning of its walls and fatty degeneration of the muscular tissue. Dr. Begbie's death has produced a sensation of grief in Scotland which the death of only a young, foremost, sagacious, and most popular physician could have produced. There have been physicians in Scotland who have made a greater mark in medical doctrine and in medical discovery. But there has been none who has been more widely consulted or more deeply trusted by the people of Scotland and of the north of England. We are probably not far wrong in estimating that Dr. Begbie's professional income varied from £7000 to £10,000 a year, which, for a consulting physician in Edinburgh, is probably unexampled. Sir James Simpson's case was that of a specialist, and altogether different. Dr. Begbie's work was most arduous, involving not only a large amount of consulting practice in his own house, but long and fatiguing journeys by rail and road. The kindness of his nature made him easy to be entreated, and he was as much at the command of the needy as of the rich. His remarkable popularity as a physician was due to the possession of a combination of qualities which endeared him alike to patients and to professional brethren. He was an admirable physician—most careful and painstaking in his clinical investigations, and not losing his interest in cases when he had made a clear diagnosis, but going on with faith and heart to the treatment of them, in which he was most successful. Witness the faith which he brought to the treatment of cases of aneurism with iodide of potassium, and the eagerness with which he lately recorded the use of chloride of ammonium in cases of hæmatinuria. He had always a word of cheerful and fresh advice for any patient and practitioner who consulted him. He was not only a thorough physician in his clinical care and his study of therapeutics, but there was a remarkable pleasantness and fascination in his manners, based on his sincere kindliness, which are invaluable qualities in a medical man, and which gave every patient he spoke to the impression that he was humanly and specially interested in his case. Further, to use the words of an esteemed Edinburgh physician, "in an especial manner he was sound to the core in the ethics of his profession—his conduct having been most honourable in all respects." Dr. Begbie's success as a consultant is the more remarkable inasmuch as he was never associated as a teacher with the University. He gave for some years (from 1858) extra-academic lectures on the Practice of Physic. His fame was due entirely to his own merits as a learned, careful, clinical physician, who had a complete grasp of all that was good in Ancient and Modern Medicine. He was well entitled to the honour conferred on him last year by the British Medical Association, in asking him to deliver the address in Medicine, as well as to the honour of the LL.D. conferred upon him by the University of Edinburgh, and the Fellowship of its Royal Society. He was a good classical scholar, and a considerable antiquarian. In fine, he was accomplished all round, and when, in 1873, the Crown had to seek a representative of Scotch medicine at the table of the General Medical Council, to succeed Sir Robert Christison, it elected, with the universal concurrence of the public and the profession, James Warburton Begbie. Though he leaves no great work in medical literature to perpetuate his name, he leaves a number of articles and papers which are models of learned and clinical writing, and he leaves an impression of general culture and medical accomplishment, which add to the credit of medicine in Scotland and in Britain.

JAMES RUTTLEDGE, M.D.

DR. RUTTLEDGE was born in 1809, and studied in Dublin, Edinburgh, and Glasgow, was appointed Staff Assistant-Surgeon to the Forces, obtained the M.D. degree in 1838 at Glasgow, and the M.R.C.S. Eng. in 1839. He practised in London for thirty-two years. In consequence of failing health he retired from practice early in 1873, and travelled for two years. He settled at Brighton a year previous to his death, which took place on the 29th January.

Medical News.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine and received certificates to practise on Feb. 24th:—

Erith, William Edward Norton, Yonge-park, Holloway.
Fisher, Thomas, St. Michael's-on-Wyre, Lancashire.
Hindle, George, Over Darwen, Lancashire.
Ruck, William, Silverstone, Towcester.
Todd, John, Auckland Lodge, Blackheath.

The following gentleman passed the Primary Professional Examination on the same day:—

Hammersley, Joseph, Guy's Hospital.

INDIAN MEDICAL SERVICE.—The following is a list of candidates who were successful at the competitive examination held at Burlington House on Feb. 14th, 1876:—

Tomes, A.	Walker, G. L.	Cobb, R.
Maitland, J.	Macgrigor, J.	Dalal, K. A.
Peevor, G. H.	Doyle, B.	Stephens, A. E. R.
Stewart, A. K.	Cadge, W. H.	Smith, M. H.
Dantra, S. H.	Henderson, W. G. H.	Farrell, D. I.
Mawson, W. O.	Boyd, H. W. B.	Hunter, J.
Meredith, E. B.	Swaine, C. L.	Halkin, N. G.
Macdonald, D. J.	Hamilton, H.	

Forty-four candidates competed for twenty-three appointments; forty-three were reported qualified, one having retired on account of illness.

DR. WM. SMITH WRIGHT, of Scarborough, died on the 17th ult., from small-pox.

DR. J. G. LOCK, of Tenby, has been presented by the Lodge of Oddfellows in the town with an appropriate testimonial.

PROF. W. K. PARKER, F.R.S., will commence his course of nine lectures on "The Shoulder-girdle and Forelimb of Vertebrata," at the Royal College of Surgeons of England, on Monday next, March 6th, at 4 P.M.

MR. HENRY FLEMING, permanent secretary of the Local Government Board, died at his residence in Charles-street, Berkeley-square, on Monday evening last, after a short but serious illness.

BRADFORD EYE AND EAR HOSPITAL.—The Committee of this hospital, according to the report read at the annual meeting of its supporters a few days ago, have the gratification of announcing an increase in the subscriptions, which had heretofore been inadequate. The benefits of the institution seem to be distributed over a wide area, patients coming to it, not only from neighbouring towns, but from Rugby, Nottingham, Durham, and other comparatively distant parts. The gratuitous services of the medical officers, Drs. Bronner and Bell, were cordially acknowledged at the meeting.

THE Town Council of Peterborough, acting as the Urban Sanitary Authority, have presented petitions to the Local Government Board to issue provisional orders to empower the said authority to provide works for water-supply, sewerage, and sewage irrigation, according to plans prepared by Mr. John Addy, A.I. C.E, Peterborough. Application having been made to the Local Government Board for sanction to borrow £120,000 for the above works, Lieut. Col. Ponsonby Cox, R.E., one of the Inspectors of the Board, attended at the Town Hall, Peterborough, on the 25th of February, for the purpose of holding an inquiry into the subject matter of the said application, and will forthwith report to the Local Government Board.

A STRANGE outbreak of diarrhœa has occurred among the inmates of the Manchester Warehousemen and Clerks' Orphan School at Cheadle Hume, the origin of which was at first supposed to be due to the consumption of contaminated butter. An analysis of the suspected article, however, failed to reveal the presence of any deleterious matter, although it was not denied that some of it was rancid. Of a total number of 172 children, 138 were attacked with the disorder, one of whom died; while nine out of the twenty-six officers employed in the institution suffered more or less severely. The opinion may safely be hazarded that if the water-supply of the building is thoroughly overhauled, it will be found that the epidemic depends on a defect at some point of its service which permits the introduction of sewage matter.

Medical Appointments.

CLARK, T. M., M.B., C.M., has been appointed Assistant Medical Officer to the Gateshead Dispensary, vice Taylor, appointed Resident Medical Officer.

DAVIS, H., M.R.C.S.E., L.S.A.L., has been appointed Resident Medical Officer to the Lewes Dispensary and Infirmary, vice Browne, resigned.

DUNLOP, W. M., has been appointed Medical Officer to the Suffolk Provident Society.

EYRLEY, J. F., L.R.C.P.L., M.R.C.S.E., has been appointed Medical Officer for the No. 1 or Northern District of the Plymouth Incorporation of the Poor, vice Shepherd, appointed Resident Medical Officer to the Infirmary and Workhouse, St. Olave Union, Surrey.

FARQUHARSON, P. D., M.B., C.M. Univ. Aberd., has been appointed Medical Officer and Public Vaccinator for the Parish of Applecross, Ross and Cromarty, vice McLean, resigned.

FOX, J. M., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer of Health for the Workington Urban Sanitary District, vice Guy, resigned.

HERMAN, G. E., M.R.C.P.L., F.R.C.S.E., has been appointed Medical Registrar to the London Hospital.

HYDE, G. E., L.R.C.P.L., M.R.C.S.E., has been appointed a Surgeon to the General Infirmary, Worcester, vice Budd, deceased.

JOHNSTON, A. C., M.R.C.S.E., L.K.Q.C.P.I., has been appointed Resident Surgeon to the Birmingham Amalgamated Friendly Societies Provident Medical Institution.

MAYBURY, W. A., M.D. Qu. Univ. Irel., M.R.C.S.E., L.S.A. Lond., has been appointed Medical Officer for No. 1 Ward District of the Colchester Union, vice Worts, resigned.

MORGAN, W., Ph.D., has been appointed Public Analyst for Carmarthen. Fees according to the Act.

PARKER, R. W., M.R.C.S.E., has been appointed Surgical Registrar to the London Hospital, vice Page.

PILKINGTON, H., L.R.Q.C.P. & L.S.A., has been appointed a Government Medical Officer to a District in the Island of Dominica, West Indies.

PURCELL, R., L.A.H.D., has been appointed Apothecary to the Workhouse and Croom Dispensary District of the Croom Union, co. Limerick, vice Nunan, resigned.

REDMAYNE, J. T., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer for the Sharples District of the Bolton Union, vice Hall, resigned.

REED, J., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for No. 2 District of the Westbourne Union, Sussex, vice Dixon, resigned.

THOMAS, W. H., L.R.C.P.Ed., M.R.C.S.E., has been reappointed Medical Officer of Health for the Cwm-du Urban Sanitary District.

WALFORD, R., M.R.C.S.E., has been appointed House-Surgeon and Registrar to the Victoria Hospital for Sick Children, Queen's-road, Chelsea.

WATERS, A. J. G., L.R.C.P.Ed., M.R.C.S.E., has been reappointed Medical Officer of Health for the Okehampton Urban Sanitary District.

Births, Marriages, and Deaths.

BIRTHS.

EMMS.—On the 21st ult., at Belgrave, Leicestershire, the wife of Alfred Wilson Emms, M.R.C.S.E., of a daughter.

HEAD.—On the 21st ult., at East Grinstead, the wife of Robert T. Head, L.R.C.P. Lond., of a son.

HOOD.—On the 28th ult., at Bletchingley, the wife of Dr. Donald Hood, of a son.

MOORE.—On the 23rd ult., at 2, Abbotsford-place, Glasgow, the wife of James Thomas Moore, M.D., of a son.

SHAND.—On the 28th ult., at 256, Union street, Aberdeen, the wife of James Wm. Fraser Smith Shand, M.D., of a son.

WINSLOW.—On the 26th ult., at Hammersmith, the wife of Dr. Lyttleton Forbes Winslow, of a son.

MARRIAGES.

LOGIE—KEAN.—On the 23rd ult., at Christ Church, Paddington, Cosmo Gordon Logie, M.D., Surgeon-Major, late of the Royal Horse Guards, to Mary Maria, only child of the late Charles John Kean, Esq.

GRAYSON—WOOD.—On the 23rd ult., at St. James's, Hadleigh, Francis Dorrell Grayson, M.R.C.S.Eng., to Emily Tyrrell, daughter of the late Henry Nash Wood, Esq.

RIDPATH—CULSHAW.—On the 22nd ult., at St. Paul's Church, Southport, by the Rev. W. Wannop, uncle of the bride, assisted by the Rev. W. Millington, vicar, David Ridpath, M.D., of Great Driffield, Yorkshire, to Fanny Lancaster, daughter of the late James Culshaw, Esq., J.P., of Trenchfield Aughton, Lancashire. No cards.

MORRIS—WORGAN.—On the 29th Jan., at St. Andrew's Church, Darjeeling, Bengal, Andrew Bernard Morris, L.K.Q.C.P., L.R.C.S., and L.M. (Rotunda Hospital) Ireland, son of Rev. G. S. Morris, Bretgorton Vicarage, Evesham, to Constance Matilda, daughter of the Rev. J. H. Worgan, Cheltenham. No cards.

DEATHS.

DAMANT.—On the 23rd ult., at Fakenham, Thomas W. Damant, M.D., aged 56.

DYCE.—On the 1st inst., Thomas Rose Dyce, M.R.C.S. Eng., Deputy Inspector-General of Hospitals, aged 59.

JOLLIFFE.—On the 26th ult., at 16, Godolphin-road, Shepherd's-bush, John Jolliffe, M.R.C.S. Eng., aged 61.

LEWIS.—On the 23rd ult., at 66, St. Mary's-terrace, Maida-hill, Alfred Lewis, M.D., Surgeon, Army, aged 34.

LORD.—On the 28th of Jan., at Haydock, John Lord, Surgeon, aged 55.

MARSHALL.—On the 29th ult., at Padiham, John Marshall, M.D., aged 31.

NASON.—On the 23rd ult., at 24, Cambridge-terrace, Kingstown, John W. W. Nason, M.D.

NEWSAM.—On the 16th ult., at Pembroke, Thomas Henry Newsam, L.R.C.P.Ed., aged 48.

O'SULLIVAN.—On the 21st ult., at 56, Rupert-street, Haymarket, Robert Collis O'Sullivan, M.R.C.S.E., aged 68.

PETTINGER.—On the 27th ult., George Pettinger, M.D., of the City of Manchester, in his 74th year.

RING.—On the 22nd of Jan., at Shelborne-road, Dublin, Edward Ring, L.A.H. Dub., aged 76.

SMITH.—On the 27th ult., at 63, Burton-crescent, Jessie, the beloved wife of Anderson Smith, F.R.C.S., and youngest daughter of the late Henry Kendall, Surgeon, of Newmarket, Cambridgeshire, aged 42.

SMITH.—On the 21st ult., at Loftus-in-Cleveland, James Broom Smith, M.D., M.C., and L.R.C.P. Ed., aged 35.

SWABEY.—On the 28th ult., at 102, Gloucester-crescent, Hyde-park, Samuel Swabey, F.R.C.S.Ed.

TOMKINS.—On the 21st ult., at 16, Fitzroy-street, John Newton Tomkins, F.R.C.S. Eng., aged 63.

WALKER.—On the 22nd ult., James Walker, M.R.C.S. Eng., of Union-street, Sheffield, aged 73.

WRIGHT.—On the 17th ult., at Scarborough, Wm. Smith Wright, M.D.

[N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*]

METEOROLOGICAL READINGS

(Taken daily at 8 a.m. by Steward's Instruments.)

THE LANCET OFFICE, MARCH 2ND, 1876.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Wet Bulb.	Dry Bulb	Solar Radia in Vacuo	Max. Temp. Shade	Min. Temp.	Rain-fall.	Remarks at 8 A.M.
Feb. 25	29·94	S.E.	38	40	...	48	37	...	Raining
„ 26	29·56	W.	45	47	...	54	39	0·33	Cloudy
„ 27	29·51	S.W.	47	51	...	53	44	...	Raining
„ 28	29·80	W.	46	47	...	57	42	0·12	Raining
„ 29	29·79	W.	50	53	...	59	46	0·05	Raining
Mar. 1	29·61	S.W.	50	50	...	51	47	0·07	Raining
„ 2	29·88	W.	41	44	...	54	39	0·30	Overcast

Notes, Short Comments, and Answers to Correspondents.

MORTALITY OF INFANTS FROM PREMATURE BIRTH.

THE last published Annual Report of the Registrar-General, which, however, unfortunately, does not relate to a more recent year than 1873, informs us that during the twelve months 10,186 deaths of infants were referred to premature birth, equal to 12·3 per 1000 of the births registered during the year. The proportion of deaths from premature birth has increased in recent years. During the five years 1866 to 1870 it averaged 11·6 per 1000, whereas in the three years 1871, '72, '73 it was 12·3. The sex proportion of deaths from premature birth showed a wide variation, being 129 deaths of male infants to 100 of female infants in 1873. The proportion of males to females born in 1873 did not exceed 109·9 to 100, while the deaths of males one year of age to females of the same age were as 127 to 100, and differed but slightly from the sex proportion of deaths referred to premature birth. It has been said that the average proportion of deaths from premature birth to children born in England and Wales was 12·3 per 1000 in 1873. This proportion varied to a considerable extent in different parts of the country. In Monmouthshire and Wales it was as low as 5·1 per 1000, and in London 10·1; whereas it was as high as 15·3 in the North Midland Counties, and 15·7 in Yorkshire. In the West Riding of Yorkshire the proportion was as high as 16·2 per 1000. It must be remembered that these figures only refer to infants born alive; but the range between 5·1 per 1000 in Wales and 16·2 in the West Riding of Yorkshire is sufficiently wide to invest its cause with considerable interest. It is possible that in Wales, where the causes of death are not as a rule so carefully returned as in other parts of the country, deaths from premature birth may often be returned as deaths from atrophy and debility; but this can scarcely account for so wide a difference. The high proportion of premature births in the West Riding of Yorkshire is probably due to the employment of pregnant women in woollen factories.

A CANDIDATE FOR A VACCINATION GRANT.

To the Editor of THE LANCET.

SIR,—In October, 1874, the inspector came round to examine the vaccination in my district. As he had sent me notice he was coming, I stayed at home to receive him at considerable inconvenience to myself, and lost half a day; but no matter that. After examining my books, he expressed himself as highly satisfied, and departed, rejoicing no doubt. I also rejoiced, for I fondly imagined that in a month or two I should receive a substantial reward for my pains. Would you believe it, Sir, sixteen months have elapsed, and I have heard nothing. Now, I do not grumble at not having had a grant, as I may not have deserved it; but I do grumble at not being told of my faults, in order that I may try to correct them in future.

As a young public vaccinator, and one who has not had a grant, I may be pardoned if I ask whether it is all a hoax, and whether anyone ever does receive a grant, or is it only held out to us, as a watch to a crying child, as a bribe to be good, and then when the desired effect is obtained the bribe is withdrawn? If so, I do not think in future I shall devote so much time and trouble to my vaccination and bookkeeping as I have done.

Yours truly,

Feb. 21st, 1876. A PUBLIC VACCINATOR.

TRACHEOTOMY EXTRAORDINARY.

THE Paris *Figaro* gives its readers this week a highly sensational story of domestic tracheotomy—not homicidal or suicidal, but simple household surgery. A child of Mdme. L. was seized with croup, and suffered much "exhalant ce râle affreux que crie la mort." A doctor was called, and in his several visits ordered only the remedies commonly employed in such cases. Did he shrink from tracheotomy? the *Figaro* inquires. The mother, left alone at night with her child, felt that it was left to die. In a moment of "inspiration céleste" she seized a penknife, and unhesitatingly opened with it the child's throat. "Then applying her lips to the bloody wound, she sucked out the fatal membranes. She passed the night thus, ceaselessly sucking and spitting." In the morning the father called the doctor, who examined the child, and said "She is saved!" Comment on such a case would be superfluous. We do not know whether most to wonder at the power of a mother's love which would guide her knife amid the structures which sometimes baffle an anatomist, or at the constitution of a child which after an acute attack could survive a whole night of sucking at a bleeding wound, or at the quickness of the recovery from a membranous laryngitis—a recovery probably unparalleled in authentic records.

R. G. M.—The best plan will be to communicate with the Shipping Offices.

SALOP MEDICAL AID SOCIETY.

To the Editor of THE LANCET.

SIR,—The medical officer of this Association of Friendly Societies has just resigned, and the Committee of Management, finding they cannot pay their way, have decided to advertise for a successor at £150 per annum, instead of £200. They have preferred doing this to increasing the subscriptions of the members a few pence a year each. There are between two and three thousand members—men, women, and children. The area is a radius of eight miles; there is no assistant, and only a young lad to dispense. The number of attendances at the surgery average over forty a day, the visits in the town and country being about twenty. The stated hours of attendance at the dispensary are, daily (Sundays excepted) from nine till eleven A.M., and from six till eight P.M.; also, in addition to those hours, from one till half-past two P.M. on Wednesdays and Saturdays; but all these hours are always exceeded. Very little time, therefore, is left for visiting, to say nothing of meals, rest, and recreation. There is also a certain amount of midwifery and night work. The patients, regarding their medical officer as their paid servant, are exacting and unreasonable. All this work, anxiety, and annoyance are expected from one man for £150 per annum! The first medical officer that was appointed took the situation with the understanding that an assistant would be appointed in three months. He struggled on single-handed nearly three years, and then relinquished the hopeless task of doing impossibilities with satisfaction to himself or patients or managers. The retiring medical officer has held the appointment a year and a quarter, and has plainly told the Committee of Management that one man cannot grapple successfully with such a mass of work, and also that they are not likely to obtain, or at any rate retain, the services of a "fully qualified, experienced, and trustworthy" surgeon for the remuneration they offer. Even if there were only half the amount of work that there really is, two medical officers would still be necessary to meet the sudden and urgent demands from such a number and such an area. To meet the cost of the staff required, the rate of subscription ought to be twopence per week for each member, regardless of age, and the distance ought to be restricted to two, or at the most three, miles from the centre of the town. The rate of subscription suggested is the same as the Government allowance for medical aid to the wife and each child of the volunteer instructor in this town. The Managing Committee seem blind to the fact that the proper performance of the required work is quite beyond the powers of one man, and that a good man cannot be obtained for less than double what they offer. Such an institution as this requires at least two medical officers, not only for the purpose of obeying sudden and urgent calls, but also to enable the chief medical officer to absent himself occasionally. Under present circumstances this will be an impossibility. With reference to rate of subscription also, I have not mentioned that the old Shrewsbury Dispensary has within the last year and a half adopted the provident principle, and although the subscriptions of its members are nearly the same as those of this institution, yet the managers find it necessary to have a liberal list of charitable contributors. I repeat, therefore, that for such an institution as this to be *entirely self-supporting*, the rate of subscription cannot be less than 2*d.* per week for *every* member, regardless of age—that is, the same rate that is paid for volunteer instructors by Government.

Yours &c.,

February, 1876. OBSERVER.

*** We have been awaiting with interest accounts of the working of the system of Friendly Societies clubbing together to be attended by one medical officer. We confess to thinking that the Societies have not shown a proper sense of the value of medical attendance. The above letter comprises our opinion. There is something unworthy of working men in exacting such an amount of work for such small pay. Medical brains are not to be had on such terms.—ED. L.

CLINICAL THERMOMETERS.

MESSRS. ARNOLD AND SON, surgical instrument-makers, have brought under our notice an improved pocket clinical thermometer. The construction of this instrument precludes the possibility of the reading scale becoming obliterated or indistinct—the outer surface, in fact, being a plain glass cover.

INSTITUTION FOR IDIOTIC CHILDREN.

To the Editor of THE LANCET.

SIR,—Can you or any of your readers inform me of an institution for idiotic children in a healthy locality, where the charges are small, or admission gained by patronage? The child I wish to place in such institution is aged three and a half years.

Yours obediently,

London, February, 1876. ENQUIRER.

*** Try Earlswood Asylum.—ED. L.

THE HEALTH OF WORCESTER.

DR. WM. STRANGE, the medical officer of health for the city of Worcester, has presented to his urban sanitary authority his report upon the health and sanitary condition of the city during last year. It appears, although we are not told upon what proportion it is calculated, that the death-rate was equal to 25·6 per 1000, against 22·3 in the preceding year. This increase is attributed to the unusual fatality of bronchitis and other diseases of the respiratory organs during the inclement weather of the early part of the year and the late autumn. Of 857 deaths from all causes, 135 were referred to the seven principal zymotic diseases, including 81 from diarrhœa, 24 from whooping-cough, 13 from scarlet fever, 8 from measles, and 6 from enteric fever. The mortality from these zymotic diseases was equal to 16 per cent. of the deaths from all causes. As the result of a special inquiry into the causes of the annual scourge of summer diarrhœa, Dr. Strange informs us that he is convinced "that the usual popular ideas on the subject have no foundation in fact," and pronounces the disease to be "a real blood-poisoning," the result of overcrowding, and "the foul emanations caused by the heat of summer acting upon the masses of filth and corruption within and without the dwellings." It is to be hoped that the Worcester urban sanitary authority will endorse the theory of the excrementitious origin of diarrhœa, which is, by-the-by, not quite a new theory, and prove their belief in it by taking the necessary precautions to prevent the accumulation of any "masses of filth and corruption within and without the dwellings" of Worcester, and so mitigate the fatality of summer diarrhœa in 1876. Notwithstanding the abatement of nearly 2000 nuisances in 1875, much sanitary work evidently remains to be done in the city, the death-rate in which is said to range from 10 to 40 per 1000 in different localities. Some of the dwellings in the town are described as so dilapidated, dirty, and small that they can scarcely be called houses, and the only possible improvement recommended for some of the courts and alleys is demolition. In the way of reduction of overcrowding, improved privy accommodation and filth removal, the substitution of pure for impure water from polluted wells, much good sanitary work has recently been done in Worcester, and there can be little doubt that the health of the town has benefited. The prevalence of enteric fever has certainly declined, and scarlet fever is far less fatal than during previous visitations. Well supported by the sanitary authority, Dr. Strange will be able materially to reduce the still excessive death-rate in Worcester.

Mr. E. Phillips.—There are no satisfactory data on the subject.

AN UNSUSPECTED SOURCE OF DANGER.

To the Editor of THE LANCET.

SIR,—I have within the last twelve months had under my care two cases of blood-poisoning, occasioned apparently by licking gummed envelopes.

In the first case the patient had a slight abrasion on the lower lip, and shortly after licking a few of the envelopes complained of heat and uneasiness in the neighbourhood of the abrasion, followed in the course of twenty-four hours by an unhealthy sort of ulcerative stomatitis accompanied with gingivitis and inflammation of the salivary glands—very similar, in fact, to the symptoms produced by mercurial salivation. The parotid gland on the right side suppurated, and for some days discharged an unhealthy-looking, ichorous pus. This was followed by a low form of typhoidal pneumonia, which terminated fatally about a fortnight from the commencement of the attack.

In the second case the patient had a small fissure on the edge of the tongue, and a few hours after licking the envelopes suffered from great swelling and inflammation in the tongue and soreness in the gums, which was followed in a few days by an extension of the inflammation to the mucous membrane of the nose, and from thence to the conjunctiva of both eyes. No ulceration or formation of matter took place, and the inflammation of the tongue subsided in about five days.

I have had the gummed portions of the envelopes very carefully analysed, with a negative result so far as any mineral poison is concerned, and septic poison is at present beyond the bounds of chemical research. It was suggested that when in a fluid condition the gum might have absorbed some septic matter from the atmosphere of close and badly ventilated working-rooms in which it was manufactured, and afterwards the human body might be a favourable nidus for the poison to show its activity in.

I should feel much obliged if you or any of your readers could refer me to any recorded cases of the kind, or offer any suggestions with reference to the cause and origin of the disease.

I remain, Sir, yours sincerely,

Beccles, Feb. 17th, 1876. EDWARD B. CROWFOOT.

Mr. F. Wright Baker.—The memoir is prefixed to the last volume of the St. Bartholomew's Hospital Reports. Beyond a few copies for private distribution, it has not been published separately.

S. S. A.—The Congress of the Social Science Association will, we believe, be held in Liverpool in October next.

Surgeon-Major Smith, (Edinburgh.)—We have read the copies of the whole correspondence forwarded, but regret that we cannot afford the space for its publication.

Dr. Morehead (Edinburgh) is thanked for his courtesy.

THE SYDENHAM SOCIETY.

To the Editor of THE LANCET.

SIR,—I wish the Sydenham Society could translate and issue some standard surgical books, such as Billroth's Surgical Pathology and Billroth's and Pitha's Lectures or book on Surgery, which you mention in your obituary notice of Pitha. There has been great delay in issuing recent books, and perhaps this may have been unavoidable: but I feel sure that many subscribers would be glad to see the Sydenham Society resolve to issue some first-class works on Surgery.

Your obedient servant,

February, 1876. LOCAL SECRETARY.

"A PHYSICIAN'S BILL."

A MEDICAL man should never bring an action for the recovery of fees without being sure of his ground. To bring an action for the recovery of guinea fees is a very doubtful procedure, especially when professional service consists in looking at the cook's finger; "in attending Mr Mason" —"a friend" of the defendant,—"suffering from headache and sickness, the effects of drink," &c. &c. Another charge in a bill we are commenting on was £6 6s. for one day's attendance on Mr. Mason, including four visits, arranging with a man to go with him to Scotland, and seeing him off. There is an incongruity in these charges. The fees are those of a physician in consulting practice; the services those rendered by a general practitioner. The action we refer to was brought against a wealthy lady, Mrs. Mary Gibson, of Leamington, by Mr. Charles Oak, M.R., of that town, who said his usual fee was a guinea. His Honour said that half a guinea was as much as the plaintiff, looking at his position, could reasonably expect. After going through some of the items, he gave a verdict for the defendant. It appears to us, we repeat, that medical men who are happy enough to have a guinea for their ordinary fee should keep out of courts. Such fees are essentially honoraria, not to be haggled about in a County Court. Judges can scarcely recognise them as within the custom of general practice.

Squire.—It is quite possible that she may, but not probable.

TYPHOID EPIDEMICS.

To the Editor of THE LANCET.

SIR,—The outbreak of the present epidemic of typhoid fever at Eagley, near Bolton, as well as of other epidemics which have prevailed in recent years in other parts of the country and have been traced to the consumption of milk contaminated with sewage water, seems to me to raise a question of considerable importance in regard to the etiology and pathology of typhoid and similar diseases, and to open up a new field of inquiry.

It appears to be the case that, whilst of those who have partaken of the mixture of milk-and-water a large proportion are attacked, others who have drunk of the water only have been much less liable to suffer; although, of course, the original source of mischief must exist in a much more concentrated form in the latter case than in the former. Statistics, if attainable, of the proportion in either case would possess great value. An explanation of this, which commends itself at once to the mind, is that the germs of the disease, whatever their ultimate nature, find in the milk a nutrient pabulum analogous to the blood itself, fitted for their reception and development, and that they there undergo a process of incubation and multiplication, and are thus the more prepared on admission to the human body to produce their characteristic results. In the Eagley outbreak it was noticed by some of the consumers that the milk was changed in appearance and proportion, and this may have been due to such "fermentation."

When we consider how similar the composition of milk is to that of blood, the above explanation will not appear improbable, and it is at least worthy of the attention of those who have the opportunity of further investigation. How far some other foods, whether before or after admission to the stomach, may act in the same manner as milk is a worthy object of inquiry.

I am, Sir, your obedient servant,

General Hospital for Children, Pendlebury, Manchester, Feb. 17th, 1876. C. A. RAYNE.

*** Our correspondent has overlooked the entire absence of evidence to show that any of the water, some of which was presumably mixed with the milk, was drunk alone. Before any inference can be drawn that the water had a more potent influence when mixed with milk than when taken alone, it would be necessary to show, first, that many persons not attacked with fever drank water from the same source as that from which the milk was adulterated; and, secondly, that all persons who were attacked in the first instance took milk only, and not water. It is not improbable that any persons who took both impure water and the adulterated milk acquired the fever from both sources.—ED. L.

REGISTRARS AND CERTIFICATES OF REGISTERED MEDICAL MEN.

J. F. E. complains that the registrar of deaths demurred to register a death on the ground that, though certified by "J. F. E.," he had not been in attendance on the case twelve hours, and asks us if a registrar can refuse a registered medical man's certificate of death because the attendance had not been of twelve hours' duration. We are not aware that a registrar has any such power. He exposes himself to a fine if he does not register a death which he should register.

MUSCULAR EXERTION AS A CAUSE OF ALBUMINURIA.

To the Editor of THE LANCET.

SIR,—In these days when athletics are carried to such an extent in our colleges and public schools, I feel it right to draw the attention of medical men to an important fact which I have not observed noticed in any medical work—viz., that excessive muscular exertion will produce temporary albuminuria, and to suggest that if frequently continued it may become a cause of permanent kidney disease. As a case in point, I will describe my own symptoms. When a student at Guy's I entered for the mile race in the United Hospital Sports. Two days previous to the race I ran a mile. The same evening, happening to be reading a work on the Urine, describing how to test the same, I thought by way of illustration to test my own. My horror may be imagined on finding it to be nearly solid with albumen. I did not feel ill at the time, and it disappeared within twenty-four hours. The next day but one previous to the race, I tested my urine, and found it healthy, and again ran a mile, and on examining some urine passed immediately after, found it nearly solid with albumen, which again totally disappeared in about twenty-four hours, and may, therefore, I think, be fairly attributed to the exercise; for though it is now nearly nine years since, I have never found any. It might be interesting to the profession to know if any medical officer of our public schools has noticed the same.

Yours truly,

Clapham-common, Feb. 1876. BEV. DUKE.

DOMESTIC SERVANTS AND PROVIDENT DISPENSARIES.

IT is said that the surgeons of the Bedford Provident Dispensary have unanimously declined to act upon the resolution of the Governors passed at the late annual meeting, requiring them to attend domestic servants at the houses of their employers, except in houses rated under £20 a year. This is a new question on which we should like further information. If the servants are *bonâ fide* members of the Provident Dispensary, it seems rather hard that they should not be attended, the more so as the law imposes no legal obligation on masters to provide medical attendance for their servants. If they are not attended in a provident way, or by the grace of their masters, they must either drift, unattended, as many of them do, into grave states of disease, or become patients of a purely charitable dispensary, to be attended by its medical officers, who would have a much better right to object to attend domestic servants at the houses of their employers, even if they were subscribers to the dispensary.

Mr. E. L. Hussey will see that we have inserted various letters bearing directly on the question—the title used by the Edinburgh College in addressing its licentiates, and the representations which the College has been in the habit of making to them as to the use of the title of "Dr." This is the only question now at issue, and we cannot afford space to go into the general question of titles of courtesy from "Mr." up to "Lord."

H. J. T., (Wingfield Park.)—See the advertising columns of our issue of Feb. 26th.

THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Now that a large number of commissions as surgeons are offered for competition both in the British and the Indian medical services, a few remarks on the relative values of the services may be of interest to some of your readers.

I am convinced that if men knew what the Indian service was, not one-third of those who now come out would do so. Like myself, most men enter the service with the idea that in a few years they will obtain a valuable civil surgeoncy and rich native practice; but, in spite of the glowing yarns of old Anglo-Indians, one quickly finds that such hopes belong to the past. Mention has been made of the injustice of "officiating" appointments on "unemployed pay." These arrangements, made, of course, in the interests of seniors, have only been in force some six years. As a consequence of their action, I may mention the case of a young surgeon who was knocked about to no less than ten different regiments during a space of less than two years, during fourteen months of which time he drew only 286 rupees, although he had passed the "Lower Standard." You will get some idea of the way men are moved about when I tell you that I met a native infantry regiment that had had just twenty surgeons during as many years. Though some young surgeons may get 450 rupees within six months of their arrival, they are the exceptions. In Bengal, of the thirty juniors on the list, twenty-one were holding officiating appointments in July, 1875; and of the eighty-six surgeons of less than five years' service, no less than thirty-eight; five other men were in Europe on sick certificates.

The Indian service is by no means so much superior to the British as one is led to believe. One comes out to India in one for eight years, in the other for five; and then when the Indian surgeon goes home on furlough, he has to pay his passage both ways, while the British surgeon gets a free passage. If a man is married and has a family, this alone nearly equalises the difference in pay. In the British service a man is sure of a good station; whereas in the Indian one may find himself in the jungle with some dozen other Europeans, and without any mess, all the other officers being married men. Life under such terms is merely banishment.

A grievance of the Indian service is the admission of natives into it; for while only a person born of European parents can hold a commission in the British service, or even in a native infantry regiment, the surgeon may yet be a native, and one's superior officer, or deputy surgeon-general, may be a Baboo. The Anglo-Indian prejudices are so intense against anyone that has the least touch of the "tar-brush"—to have black hair even is suspicious,—that one can only realise in India the grave slight that is thus cast on the Indian medical service and its members. The pay of these men, too, is an injustice; for while English surgeons in their own country only get 10s. a day, being paid 286 rupees on account of climate and the heavy expenses of European living, these native surgeons receive 286 rupees for living in their own country, in a climate to which they are thoroughly adapted, and where they live comfortably in native style on 40 rupees per month. This is surely unfair to European surgeons who come to India on an income which, I have no hesitation in affirming, is far inferior to that of a house-surgeon in an English hospital on £100 a year, with board, rooms, and washing.

On the Bengal establishment, July 1, 1875, there were 346 surgeons of all ranks; of these, 137 were in regimental, the remainder in civil employ or on furlough.

With reference to "unemployed" pay, Deputy Surgeon-General C. R. Francis wrote to the *Indian Medical Gazette*, July, 1874, in answer to some severe strictures in that journal on his *Indian Medical Officers' Vade-Mecum*, as follows:—

"But my reason for not dilating upon the subject was, that, as a Government servant, I thought I was not justified in saying what *might* have the effect of deterring young men at home from entering the Indian medical service"!

In short, he had taken the Queen's shilling, and must stand by and see his professional brethren misled.

As to civil surgeoncies, there are only 21 first-class stations in the whole Bengal Presidency, and 110 second-class. The value of the latter is so small that, as a rule, a man actually draws more pay with a regiment. In a civil station, however, he avoids mess, band, and entertainment subscriptions, which are often heavy in a native regiment. The present incumbent of one of the favourite first-class stations, which has a large civil population, told me that now his practice was worth very little. The old notion of civilians paying a week's pay for attendance on their wives and families is exploded. People are rarely ill in the cold season, and in the hot season they migrate to the hills. Should they require medical attendance, they pay a fee just as at home. Another surgeon who has held a second-class station for twelve years told me that in that time he had not received 1000 rupees from natives; he "goes in" for practice, and that his private practice consists in the care of *four* families. This, and 160 rupees for the sole charge of a gaol with 400 prisoners, clear at three times the money, constitute the only improvement in his pay over that of regimental employ.

Hill stations were formerly great hauls; but three years ago an order was promulgated, entitling the wives and families of officers to free attendance in the hills, and so a hill station now means hard work, and a nearer approach, by some 6000 feet, to that happy region where the doctor's hypothetical reward is said to exist.

Lately we have heard much of hospital abuse, but as yet nothing of army and navy abuse. Although I am one of those men who, as things now are, would not think of accepting a fee from any officer in either service, I am yet quite unable to understand the anomalous action of Government in providing *free* medical attendance for officers, who are presumed to be gentlemen by birth and fortune, as though they were paupers. An officer has a right to expect that, when he is sent into a wild and desolate country Government shall have a surgeon in attendance, just as the P. and O. Company provides surgeons on its steamers; but then if a passenger requires medical attendance he pays the surgeon. So should each officer pay the regimental surgeon, say a week's pay annually. As long as army doctors are at the beck and call of every officer gratuitously, so long will they be lightly esteemed. "He's only the d—d doctor." Englishmen value things according to the price they pay for them. The existence of such an anomaly requires the earnest consideration of the profession.

If men come out to India expecting to get nothing more than the pay laid down in para. 8 of the India Office memorandum, they will not be disappointed; but if buoyed up by the false ideas of such persons as your correspondent "Half-Pay"—ideas which were true ten years ago,—they will be grievously mistaken. Of ten men who landed in Bengal in November, 1874, two have already left disgusted. If a man asked me whether I should advise his going into the British service as things are now, I should say, Certainly not, if you have any respect for yourself or your profession. Upon the present *non-action* of candidates depends the future of the army medical department. Would you advise the Indian medical service? No, not if you are worth your salt, for you will do much better anywhere else.

I remain, Sir, yours &c.,

India, Jan. 1876. ANOTHER CRAPPINCH.

ALCOHOL IN FEVER.

DR. SIMON NICOLLS, medical officer of the Longford Fever Hospital, is a firm upholder of the non-alcoholic treatment of febrile diseases. Fever of a malignant type, and attended with a high mortality, appears to have been prevalent for some months past in the town and neighbourhood of Longford. Dr. Nicolls, in his report for the year 1875, says that the admissions to the hospital since the end of May last year numbered 41, and were generally of a severe form, "many complicated with pneumonia, and not a few followed by measles, scarlatina, and diphtheria." Of the number above stated, 35 recovered, 2 died, and 4 were convalescent at the time of giving in the report. These favourable statistics Dr. Nicolls attributes to his adoption of the plan of treating fevers without the use of alcohol.

X. Y. Z.—So much depends upon the circumstances of the case that it would be most difficult to give advice in the matter. Our correspondent himself is the best judge of the amount which should be claimed.

A Student.—Probably not.

SMALL-POX AND VACCINATION.

To the Editor of THE LANCET.

SIR,—In reading over the pages of your valuable journal of the 19th and 26th February I find that small-pox has broken out in one of our prisons. The coroner of the district very properly writes to the Home Secretary to be informed if the certificate of the gaol surgeon would suffice without holding an inquest. The Home Secretary replied that in such a case an inquest was necessary—I think a most wise decision, the object, I presume, being to ascertain by evidence the source of the contagion, and presumably for taking measures to prevent a similar visitation in that or any other prison. It occurs to me that, inasmuch as we have a Compulsory Vaccination Act as applied to infantile vaccination, and as provision is made for encouraging adult vaccination, I would suggest for the consideration of the Home Secretary and our gaol authorities the *absolute* necessity of revaccinating all the prisoners on their admission. By this simple procedure small-pox would be annihilated in our gaols and penitentiaries. On a similar occasion, when small-pox broke out amongst the inmates of St. George's Hospital, London, the authorities vaccinated all the patients, by which means its further progress was arrested.

We have abundant evidence of the prophylactic value of revaccination in the fact that during the last epidemic of small-pox few, if any, small-pox patients were admitted into the London or Liverpool hospitals who had been revaccinated. Confirmatory of the above is the well-known fact of the nurses and servants of the London Small-pox Hospital having had complete immunity from the disease by revaccination prior to their admission, and that during a period of thirty years. So reliable and valuable a preventive should be enforced by the authorities in all gaols and public charities.

Your obedient servant,

R. HODGE, M.D.,

Everton, Feb. 1876. Public Vaccinator.

An Old Subscriber.—We would advise our correspondent to apply to Dr. Pitman at the College.

X.—We know of no more recent account than that contained in the article on the subject in Reynolds's System of Medicine.

Weston-super-Mare.—There is no examination for the Fellowship of the College in question.

DOES CHLORAL CAUSE INSANITY?

To the Editor of THE LANCET.

SIR,—In the reports of the coroner's inquest on the body of Mr. William Hudson, I find that "Dr. Bond stated that an overdose of chloral had frequently made persons insane." The statement is so important that the evidence upon which it rests ought to be laid before the profession.

Yours truly,

February, 1876. INQUIRER.

MEDICAL DEGREES AND THE UNIVERSITY OF CAMBRIDGE.

A CORRESPONDENT, encouraged by Professor Humphry's statement that the Universities are open to consider "any proposal from any quarter which is likely to be of real benefit to the profession and the public," makes the following, among other, remarks:—

"No law need be outraged nor present regulations greatly changed—only slightly modified—if Cambridge University threw open the doors of its examination room for the M.B. and M.S. degrees to the members of the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin of five years' standing on the Medical Register, and who could furnish proof of having passed an examination in Arts and Science required by any British or Irish University preliminary to taking its degree in Medicine or Surgery, or, in the absence of this, to pass such further examination in Arts and Science as shall, with the one already passed as required by the Colleges, be deemed by the Senate as equal to the Science and Arts examinations now required to be passed at Cambridge. Of course those practitioners who were in practice before the establishment of the Medical Council would require to be specially and liberally dealt with in this respect. Dublin University has opened its doors to all physicians and surgeons who have taken a degree in Arts at Dublin, Cambridge, or Oxford, so that all such practitioners in Ireland can proceed at once to the M.B. degree, if they think proper, without much trouble or expense, and thence to the doctorate in the ordinary course. Shall it be said any longer that the time-honoured University of Cambridge lags behind to remove a grievance or supply a deficiency? A good advance has been made; one step more, and work in this respect will be done which will command the esteem of the medical profession."

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—I beg to state that neither my son, my assistant, nor myself had anything to do with the insertion of the advertisement in the *Pontypool Free Press*, which you have copied in your issue of Saturday last, and I am sorry that I was not communicated with before its insertion in THE LANCET. I am, Sir, yours obediently,

Pontypool, Feb. 24th, 1876. J. ESSEX.

ERRATA.—In Dr. Williams's letter on page 336 in our last number, sixth line, second paragraph, for "bear," read *bore*; and on the ninth line from top of second column, for "ingenuously," read *disingenuously*. The latter was not a printer's error.

COMMUNICATIONS, LETTERS, &c., have been received from—Sir T. Watson, London; Dr. Robert Barnes, London; Mr. Thomas Smith, London; Dr. Southey, London; Dr. Habershon, London; Mr. Maunder, London; Dr. Pavy, London; Mr. Jabez Hogg, London; Mr. J. J. Bennett, London; Mr. Park, Stewarton, N.B.; Dr. Wiltshire, London; Mr. Turner, London; Mr. Addy, Peterborough; Mr. Pitman, London; Dr. Deeping, Southend; Mr. German Reed, London; Mr. E. Phillips, London; Mr. Southall, Worcester; Dr. Morris, Evesham; Mr. Morley, Portsmouth; Mr. Dunlop, Woodbridge; Mr. Wanklyn, London; Messrs. Young and Postans, London; Mrs. Bowyer; Dr. Nursey, Sunderland; Mr. Baker, Derby; Mr. Candler, Uppingham; Mr. Brown, London; Mr. Inglis, Worcester; Mr. Thain, Landport; Dr. Bucknill, Rugby; Mr. Matthews, Clarenceville; Dr. Brett, Watford; Mr. Rose, Stornoway, N.B.; Mr. Field, London; Dr. Campbell Black, Glasgow; Mr. Hussy, Oxford; Mr. Bowes, Ipswich; Mr. Ellis, Bristol; Dr. Hughes, Cardiff; Mr. Berry, Wigan; Mr. W. Park; Dr. Hodge, Everton; Mr. Essex, Pontypool; Dr. Thornley, Leicester; Mr. Brown, Aberdeen; Mr. Bradley, Manchester; Dr. Wardell, Tunbridge Wells; Messrs. King and Co., London; Dr. Urban Pritchard, London; Dr. Pocock, London; Dr. Duke, London; Dr. Dickinson, Liverpool; Mr. Mead, Chichester; Mr. Macpherson, London; Mr. Smith, Greenwich; Mr. Webber, London; Mr. Weston; Dr. Williams, Southsea; Mr. Taylor, Liverpool; Dr. Stephenson, Fawley; Dr. Needham, Gloucester; Captain Mercier, London; Mr. Woolcott, London; Mr. Westerton, Kensington; Mr. Fowke, London; Mr. Bruorton, Bradford; Mr. Bingham, Manchester; Dr. R. Haldane; Dr. Squire, Edinburgh; The Honorary Secretary of the Obstetrical Society; An Old Subscriber; A. K. L.; R. G. M.; A Member of the Committee; A Ten Years' Licentiate; Staff-Surgeon R.N.; A. M. D.; Purity; The Military Secretary, India Office; Senex; X.; Weston-super-Mare; C. E. L., Poole; Enquirer; X. Y. Z.; Epsilon; A Subscriber; The Director-General of the Medical Department of the Navy; A. B., Callington; J. R., Sunderland; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from — Dr. Willis, Monmouth; Mr. Box, Chirk; Dr. Colmer, Yeovil; Mr. Keogh, Brighton; Mr. Welch, Camelford; Mr. Sargeant, London; Mr. Smith, Loftus-in-Cleveland; Mr. Greenall, Chorlton; Mr. Cornish, Manchester; Mr. May, Forest Hill; Mr. Ballingall, Hull; Mr. Lampen, Leeds; Mr. Johnston, Glasgow; Mr. Hartley, Leeds; Mr. Fox, London; Mr. Sinclair, Manchester; Messrs. Walker and Gaitskell, Sydenham; Dr. Griffith, Wotton-under-Edge; Mr. Millet, South Brent; Mr. Pearce, Ipswich; Mr. Jones, Llanfillan; Dr. Plumer, Snaith; Mr. Colston, Harleston; Mr. Beasley, Rowley Regis; Mr. Johnson, Salford; Mr. Emms, Belgrave; Dr. Crowther, Luddenden Fort; M. S., Glasgow; Delta, London; S. N. W., Croyland; M.D., Taunton; X. W. M.; C., London; E. M.; Secreby, York; S. F., Hull; Medicus, Darlington; Alpha, London; Medicus, Warrington; R. R.; S. O. G.; R. E., Swansea; Medicus, London; S. P. G., Wigton; Studens; Medicus, York.

Birmingham Morning News, Manchester Guardian, Newcastle Chronicle, Welshman, Marylebone Mercury, Western Morning News, Bolton Evening News, Surrey Advertiser, East London Observer, Cork Constitution, Bolton Guardian, Whitby Gazette, and *Sanitary Journal of Scotland* have been received.

Medical Diary for the ensuing Week.

Monday, March 6.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. W. K. Parker, "On the Shoulder-girdle and Fore-limb of Vertebrata."
MEDICAL SOCIETY OF LONDON.—General Meeting.—7½ P.M. Ballot for Officers and Council and other business.—Dr. Brunton, "On an Old Remedy Revived: the Therapeutic Uses of Pulsatilla Nigricans."

Tuesday, March 7.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
PATHOLOGICAL SOCIETY OF LONDON.—8½ P.M. Adjourned Discussion on Syphilis.

Wednesday, March 8.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at 1½ P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. W. K. Parker, "On the Shoulder-girdle and Fore-limb of Vertebrata."
MEDICAL SOCIETY OF LONDON.—7 P.M. Dinner of the 103rd Anniversary.
OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Presentation of Models &c., with Remarks, by Dr. Arthur Farre.—Mr. Jonathan Hutchinson, "On the Importance of Studying the Diseases incidental to Parturition in the Lower Animals, with especial reference to those in the Sheep."—Dr. John Williams, "On the Mechanical Action of Pessaries."—Dr. Cooper Rose: "A Contribution to the Statistics of Midwifery in General Practice."
EPIDEMIOLOGICAL SOCIETY.—8 P.M. Dr. W. E. Smart, "On the Cholera Epidemic of 1873 in the Basin of the Mississippi, chiefly with relation to its Importation in Fomites."

Thursday, March 9.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

Friday, March 10.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. W. K. Parker, "On the Shoulder-girdle and Fore-limb of Vertebrata."
ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. A. B. Shepherd, "On the Natural History of Pulmonary Consumption."
CLINICAL SOCIETY OF LONDON.—8½ P.M. Mr. Maunder, "On a Successful Case of Gastro-enterotomy (Artificial Anus in the Small Intestine) in a Male aged sixty-eight" (the Patient will be present).—Dr. Greenhow: "Aneurism of the Arch of the Aorta spontaneously Cured, with Obstruction of the Left Carotid and Subclavian Arteries."—Mr. Holmes, "On a Case of Distal Ligature of the Left Carotid Artery for Aortic Aneurism"; "On a Case illustrating the utility of Linhart's Chisel in Excisions."

Saturday, March 11.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

NOTICE.

In consequence of THE LANCET being frequently detained by the Post Office when posted for places abroad *more than eight days after* publication, subscribers and others are reminded that such copies can be forwarded only as book packets, and *prepaid* as such.

TERMS OF SUBSCRIPTION TO THE LANCET.

POST FREE TO ANY PART OF THE UNITED KINGDOM.

One Year ..... £1 12 6 | Six Months £0 16 3

TO THE COLONIES AND INDIA.

One Year £1 14 8

Post Office Orders in payment should be addressed to JOHN CROFT, THE LANCET Office, 423, Strand, London, and made payable to him at the Post Office, Charing-cross.

TERMS FOR ADVERTISING IN THE LANCET.

For 7 lines and under .....£0 4 6 | For half a page £2 12 0
For every additional line ... 0 0 6 | For a page 5 0 0

The average number of words in each line is eleven.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday; those from the country must be accompanied by a remittance.

N.B.—All letters relating to Subscriptions or Advertisements should be addressed to the Publisher.

Agent for the Advertising Department in France—
Mons. DE LOMINIE, 208, Rue Grenelle St. Germain, Paris